

AUGUST 1955

flow

MATERIAL HANDLING

Production • Automation • Packaging • Shipping

Forrest W. Soper

Asks if you really know how efficient your fork trucks are, then proposes a new method which will help you find outpage 57

ALSO IN THIS ISSUE:

Production Control
by Electronicspage 61

Selecting an Explosion-Proof
Electric Hoistpage 64

How Load-Cell
Weighing Workspage 76

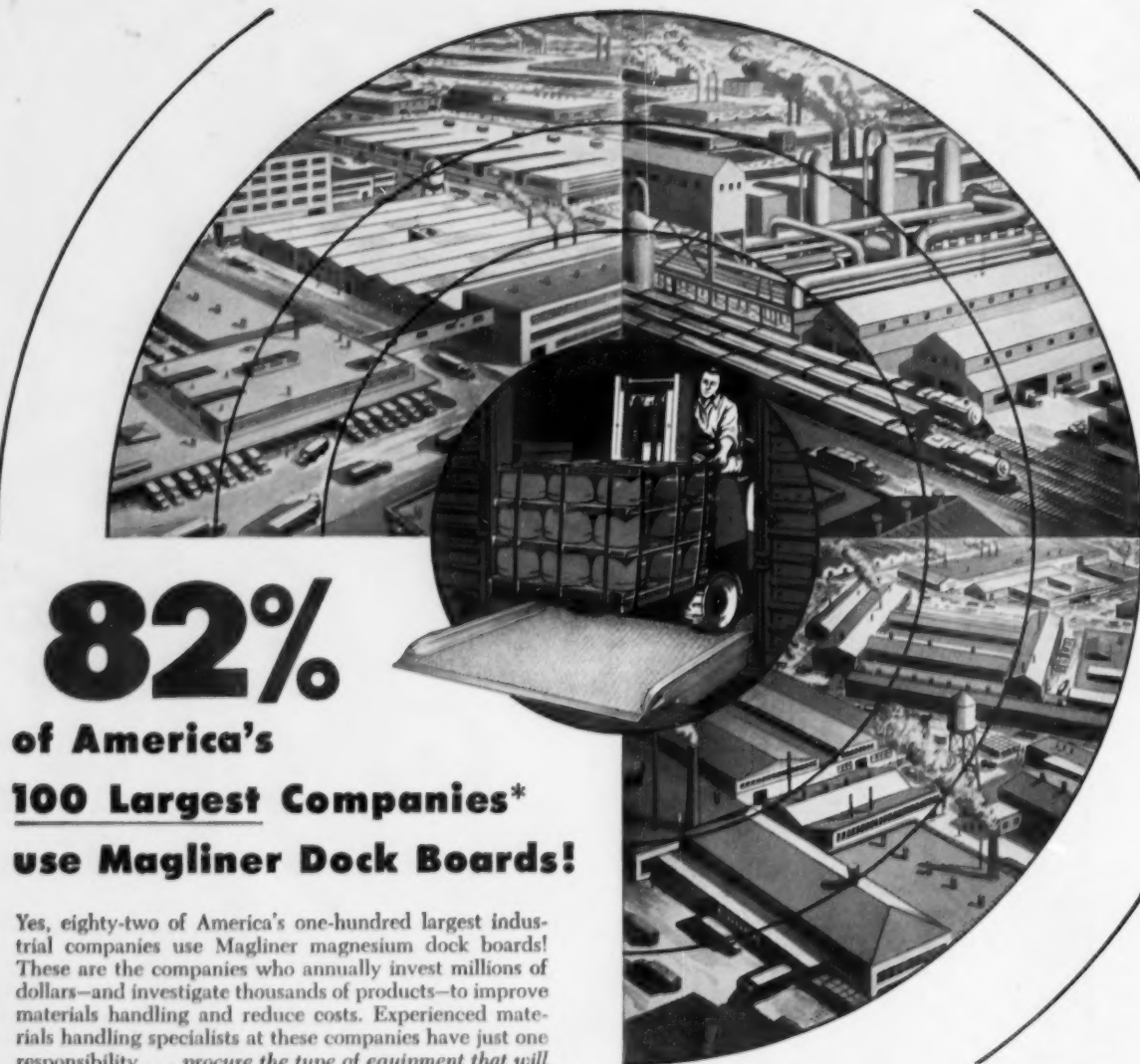
Efficient Handling
of Small Shipmentspage 102

High-Speed
Stapling Operationpage 106



How Efficient Are Your Fork Trucks? page 57
Do you really know? How to find out





82%

**of America's
100 Largest Companies*
use Magliner Dock Boards!**

Yes, eighty-two of America's one-hundred largest industrial companies use Magliner magnesium dock boards! These are the companies who annually invest millions of dollars—and investigate thousands of products—to improve materials handling and reduce costs. Experienced materials handling specialists at these companies have just one responsibility . . . *procure the type of equipment that will do the job best—at the lowest possible cost!* The dock boards they buy are selected after comparing all available equipment—and *only* after a thorough analysis of performance, service-life, safety and long-term cost.

Why do more than 8 out of 10 buy Magliners? Here are some of the reasons behind Big Industry's vote of confidence—reasons you will want to consider before you buy!

America's industrial giants prefer Magliner magnesium dock boards because with them, they get *more* out of power trucks and other loading equipment . . . *more* and faster loading cycles . . . *more* loads moved in less time. Result: output up, costs down! These companies found that Magliners protect loads and equipment against costly damage . . . insure against accidents and personnel injury. Made of magnesium, lightest structural metal in the world, they're easily handled by one man. No heavy lifting—no risk of injury. Magliners are low in initial cost—and because they provide dependable, long-life service with less maintenance—they give you greater economy *all* ways!

Materials handling men at these companies will also tell

you—*Magliner performance is planned performance!* Before each company bought, an experienced Magline field engineer personally inspected the loading operation. Result: lightweight, heavy-duty Magliner dock boards *job-engineered* for high volume, low cost shipping and receiving! No wonder 8 out of 10 of America's largest concerns *use and continue to specify* Magliner dock boards!

Whether you use one dock board or hundreds, you too will find that Magliner is the *right* dock board for you! Write today for Bulletin DB-204 and the name of the Magline representative in your area!

*Source: U. S. Department of Commerce Statistics

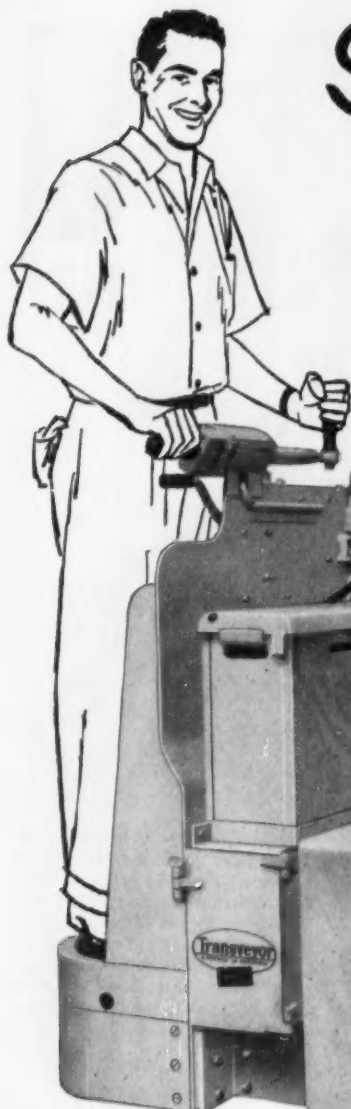


Manufacturers of MAGNESIUM Perma-Docks • Mobile Loading Ramps
Hand Trucks • Floor Trucks • Roller Conveyors • Barrel Skids • Bridges
Catwalks • Special Handling Equipment

SEND YOUR NAME AND ADDRESS FOR YOUR COPY OF BULLETIN DB-204! MAGLINE, INC., BOX 28, PINCONNING, MICH.

In Canada: Magline of Canada, Ltd., Ranfrew, Ontario

Circle No. 87 on Reader Service Card for more information



Spend 25% Less

AND DOUBLE YOUR MATERIALS HANDLING EFFICIENCY!

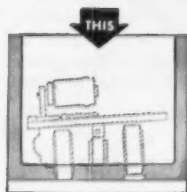
When your material handling volume and hauling distances increase beyond a certain point the rider-type truck is more practical than the operator-led type. The end-control low lift Transveyor is a medium duty truck designed to speed the moving of materials through *all* your plant operations, from Receiving through Stores—Production—Warehousing—to the Shipping Dock.

One 4000 lb. *Transveyor* will move as much materials per 8 hour shift as two 4000 lb. operator-led trucks—carry it 50% faster at approximately 40% lower operating cost. Operation is more efficient, too, because the riding operator is less subject to fatigue. Nevertheless, one *Transveyor* actually costs 25% less than the two operator-led trucks it displaces. Why not find out what this truck can do for you? No obligation—just mail the coupon.

Mail Coupon Today!

Pallet type illustrated . . . also available in platform models.

Only TRANSVEYOR Has Balanced Action



THIS
Uneven floor surfaces are compensated for by the exclusive center-pivoted feature. This eliminates frame distortion and uneven load distribution.



THIS
Drive and idler wheels are connected by a tie rod and steer simultaneously. This greatly increases tire life by eliminating scrubbing action.



NOT THIS
With the conventional rigid axle mounting, uneven floors can cause improper load distribution, chassis distortion, and excessive wear.



NOT THIS
Uncontrolled action of caster follower and single steering wheel results in excessive tire damage and wear as well as unnecessary chassis vibration.

Automatic

WORLD'S LARGEST EXCLUSIVE BUILDERS OF ELECTRIC-DRIVEN INDUSTRIAL TRUCKS

Automatic

141 West 87th Street, Dept. M-5
Chicago 20, Illinois

Please rush to me, without cost or obligation, New TRANSVEYOR data folder and a copy of your booklet "Materials Handling COST CUTTER" to help me analyze our materials handling requirements.

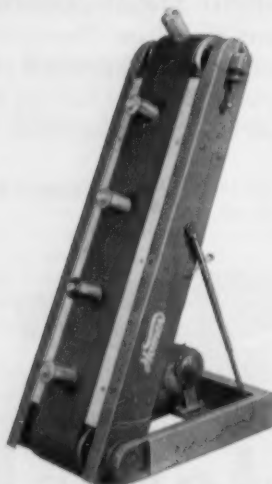
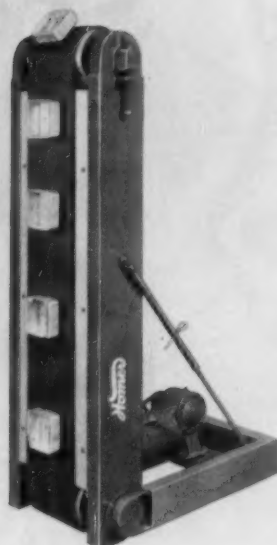
Firm
By Title
Street
City Zone State



"Space Saver" MAGNETIC CONVEYORS

the modern method of handling ferrous parts—reducing material handling costs

MATERIAL HANDLING PROBLEMS SOLVED ECONOMICALLY AND AUTOMATICALLY BY HOMER MAGNETIC CONVEYORS



UNLIMITED FLEXIBILITY

Magnetically elevate and convey ferrous metal parts and pieces such as:

Blanks—Stampings—Nuts—Bolts—Nails—Washers—Tin Cans—Steel Boxes—Bottle Caps—Rods—Gears—Machined Parts—Small Completed Products—Scrap

● SPEED PRODUCTION

Homer "Space Saver" Magnetic Conveyors offer unlimited possibilities in every industry for automatic material handling in today's automated production lines. In one operation, they both convey and elevate ferrous parts and pieces up inclines as steep as 90°—picking up from floor level if required. When used with presses with gravity discharge chutes, Homer "Space Saver" Magnetic Conveyors will fit under chute if there is as little as 6" clearance, floor to chute. When receiving pieces from press, pieces are securely held and conveyed—the magnetic assembly prevents loss of pieces from belt caused by belt resilience and bouncing. Homer "Space Saver" Magnetic Conveyors make close grouping of machines practical . . . make tandem or multiple machine operation possible.

● CUT LABOR COSTS

Homer "Space Saver" Magnetic Conveyors automatically stack ferrous parts . . . feed machines . . . and perform other handling operations formerly done by one or more men. Conveying speed may be planned so that machines can be synchronized for automatic operation. By making possible automatic multiple operation of machines, Homer "Space Saver" Magnetic Conveyors further reduce labor costs . . . and speed production.

● SAVE FLOOR SPACE

Including Homer "Space Saver" Magnetic Conveyors in a production line is like building an addition to your plant . . . they actually add valuable productive floor space. By conveying ferrous materials up inclines as steep as 90°, they eliminate long conventional conveyors with gradual inclines . . . so that production machinery can be placed much closer together.

THEY ARE PORTABLE

Available in stationary or portable types—easily moved from one location to another.

THEY ARE ADAPTABLE

Built in standard or custom units—can be used in new or existing production lines.

Write today for Bulletin MC-101

THE HOMER MANUFACTURING CO., INC., DEPT. 151, LIMA, OHIO

HOMER . . . the FINEST in Permanent Magnetic Equipment for Industry

Circle No. 68 on Reader Service Card for more information

Now-get the facts on the

Goodyear Tubeless Pneumatic Industrial Tire!



New "first" by Goodyear
gives better performance
with lower maintenance costs

This is something you should check into right away. It's America's first *completely* Tubeless Pneumatic Industrial Tire. Made with Goodyear's exclusive 3-T Process, this new kind of tire gives you:

Puncture-protective Grip Seal construction never offered before—tire clings to puncturing nails and other sharp objects to prevent loss of air.

Reduced "down time"—tubeless tires permit repairs at regular maintenance checks — not while on the job.

Tubeless Tires can usually be repaired while still on the wheel—often saves the time and effort of mounting and demounting.

And the cost? Same as a conventional tire and tube. For all the details, see your Goodyear Dealer or write: Goodyear, Industrial Tire Sales, Akron 16, Ohio.



Look for this sign:
there's a
Goodyear dealer
near you

USE THE RIGHT TIRE FOR THE JOB — BUY AND SPECIFY

GOOD YEAR

INDUSTRIAL TIRES

Circle No. 61 on Reader Service Card for more information

AUGUST, 1955

No More Manual Handling--Anywhere!

At Last— a mass produced quality machine at low price

for materials handling jobs up to 1,500 lbs.

Now—

stores, shops, warehouses, post offices, depots, farms, schools, universities, hotels, hospitals, restaurants, service stations, etc. CAN AFFORD one or more battery operated hydraulic lifts.



More than Ever—

large and small plants alike can economize with fleets of BIG JOE lifts to achieve "hydraulic handling for every department."



COMPARE THE

Challenger

FOR QUALITY

FOR PERFORMANCE

FOR PRICE



THE CHALLENGER is another "In-Between-Handling" Tool originated and developed by BIG JOE. Every BIG JOE lift is *guaranteed for quality.*

\$387⁵⁰

BIG JOE MANUFACTURING COMPANY •
900-08 Jackson Boulevard Chicago 7, Illinois

© 1955 Big Joe Mfg. Co.

Circle No. 20 on Reader Service Card for more information

August, 1955
Vol. 10, No. 11

CONTENTS



DEPARTMENTS

Advertisers' Index	163
Association and Society News	24
Calendar of Events	54
Catalogs and Bulletins	32
Classified Advertising Section	162
Equipment and Supplies Section	139
Highlights of the Month's News	50
Letters to the Editors	12
Men in the News	38
News From the Sales Field	42
News, Views & Trends	23
What's New in Useful Literature	123



FLOW is published monthly by The Industrial Publishing Group, a Division of Telenews Products, Inc., 1240 Ontario Street, Cleveland 13, Ohio, which also publishes:

FLOW DIRECTORY
 FLOW'S MATERIAL HANDLING
 ILLUSTRATED
 PRECISION METAL MOLDING
 APPLIED HYDRAULICS
 INDUSTRY AND WELDING
 WELDING ILLUSTRATED
 OCCUPATIONAL HAZARDS
 COMMERCIAL REFRIGERATION
 AND AIR CONDITIONING

SUBSCRIPTION RATES

United States and possessions—\$5.00 per year, \$8.00 for 2 years. Subscriptions in the United Kingdom: £2.5 per annum, payable in Sterling to our London Office. Foreign—\$7.00 per year.
 Canada—\$6.00 per year.
 Single copies—1-10—\$.50 each, 11-25—.40 each, Over 25—.35 each, Canada—.50 each, Foreign—.60 each.

FLOW is indexed regularly by Engineering Index, Inc. "Accepted as Controlled Circulation Publication at Pontiac, Illinois." Please return 3579 forms to 1240 Ontario Street, Cleveland 13, Ohio.

FEATURES

How Efficient Are Your Fork Trucks?	57
A new method to help you find out.	
Production Control by Electronics	61
Scheduling, inventory and programming in minutes.	
Selecting an Explosion-Proof Electric Hoist	64
Important factors to consider before you do.	
Mechanized Handling In Foundry Cuts Worker Fatigue, Adds Safety	67
How Crouse-Hinds employees benefit from efficient material handling.	
Cost Cutting Ideas	72
Now saving money in a variety of operations; one may be like yours.	
High-Speed Distribution Service	74
By fully utilizing and coordinating industrial trucks.	
How Load-Cell Weighing Works	76
A "must" in this new era of automatic control.	
80% Less Handling	80
Achieved by palletization and mechanical handling.	
Earth Movers Move In	84
And help solve industry's material handling problems.	

PACKAGING AND SHIPPING SECTION

Efficient Handling of Small Shipments	102
From a survey by Drake, Startzman, Sheahan and Barclay.	
High-Speed Stapling Operation	106
Brings about profitable and effective shipping room operations.	
Automatic Bundle Tying	108
How the Milwaukee Journal stepped up mail room shipments.	
Heavy but Fragile	110
Protecting large porcelain enamel ware during shipment.	
Packaging and Shipping Idea of the Month	112
How a better package resulted in better handling.	

Copyright 1955 by The Industrial Publishing Group, a Division of Telenews Productions, Inc.

AUTOMATION



As sliced cold meats travel by on stainless steel Wendway belting, operator labels each type as they proceed to the package wrapping machine.

IS SIMPLE

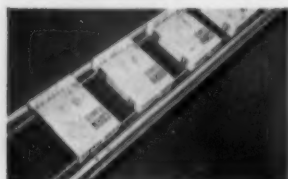
WITH

WENDWAY

THE VERSATILE, LIGHT PRODUCT CONVEYOR



Freshly packaged cheese sections are conveyed smoothly and quickly to labelling machine via Wendway.



Cartons or light packages ride perfectly on Wendway's smooth, silent belting.

● You can have remote controlled efficiency in conveying light products to any location in your plant. A Wendway system will eliminate multiple handling of products, save man hours and floor space. Wendway, industry's most versatile conveying system, specializes in moving light goods swiftly, quietly, safely and economically.

Wendway's steel wire belting is ideal for handling wrapped or unwrapped foods up to twenty pounds per unit. It permits free circulation of air from above and below. Does not sag or accumulate grease and dirt like ordinary belting. Wendway can be kept highly sanitary with hot water, or by direct scalding. Regular bright basic (lacquered) belting is fine for packages or products, stainless steel belting is recommended for foods or unwrapped meats.

So...whether your problem is assembly, processing, packing, order picking or inspection, you'll find Wendway pays for itself from the day it's installed.



Gentlemen: Please send me additional information about Wendway for conveying _____

Name _____

Company _____

Address _____ Zone _____ State _____

Have a USP Conveyor Engineer contact me at once ☐

UNION STEEL PRODUCTS COMPANY

Circle No. 132 on Reader Service Card for more information

flow

STAFF

President and Publisher
IRVING B. HEXTER

Executive Vice President
LESTER P. AURBACH

Vice President
EDWIN M. JOSEPH

General Manager
RUSSELL F. OAKES

Editor
EDWARD H. LEIGHTEN

Managing Editor
STANLEY S. GREENE

Packaging & Shipping Editor
JOHN D. VELARDO

Associate Editors
MARGARET E. GREENE
ROBERT E. LESSING

Production Manager
WILLIAM L. JERSE

Art Director
ALARIC MAUSSER

Circulation Director
F. P. MIGNIN

Franchise Department
HAROLD F. BEHM, MGR.
HAROLD ROBERTS
ROSS TAYLOR

REGIONAL OFFICES

All communications should be addressed to FLOW Magazine, 1240 Ontario Street, Cleveland 13, Ohio.

CLEVELAND

DAVID E. SAWYER
1240 Ontario Street
Cleveland 13, Ohio
Phone SUperior 1-9622

NEW YORK

LEE HAAS, DISTRICT MGR.
NORMAN B. HASSELRHIS
Room 803, 60 E. 42nd St.
New York 17, New York
Phone MUrray Hill 7-3420

CHICAGO

LLOYD WILLOUGHBY, MGR.
CHARLES F. GEYER
S. R. TRACY
Suite 1613-1615, 520 N. Michigan Ave.
Chicago 11, Illinois
Phone WHitehall 3-1655

LOS ANGELES

ALAN CAZIER
Room 1003, 3460 Wilshire Blvd.
Los Angeles 5, Calif.
Phone DUinkirk 9-9364

LONDON

JOHN A. LANKESTER
31 Palace St., Westminster
London S.W. 1, England
Phone VICTORIA 2408

TOKYO

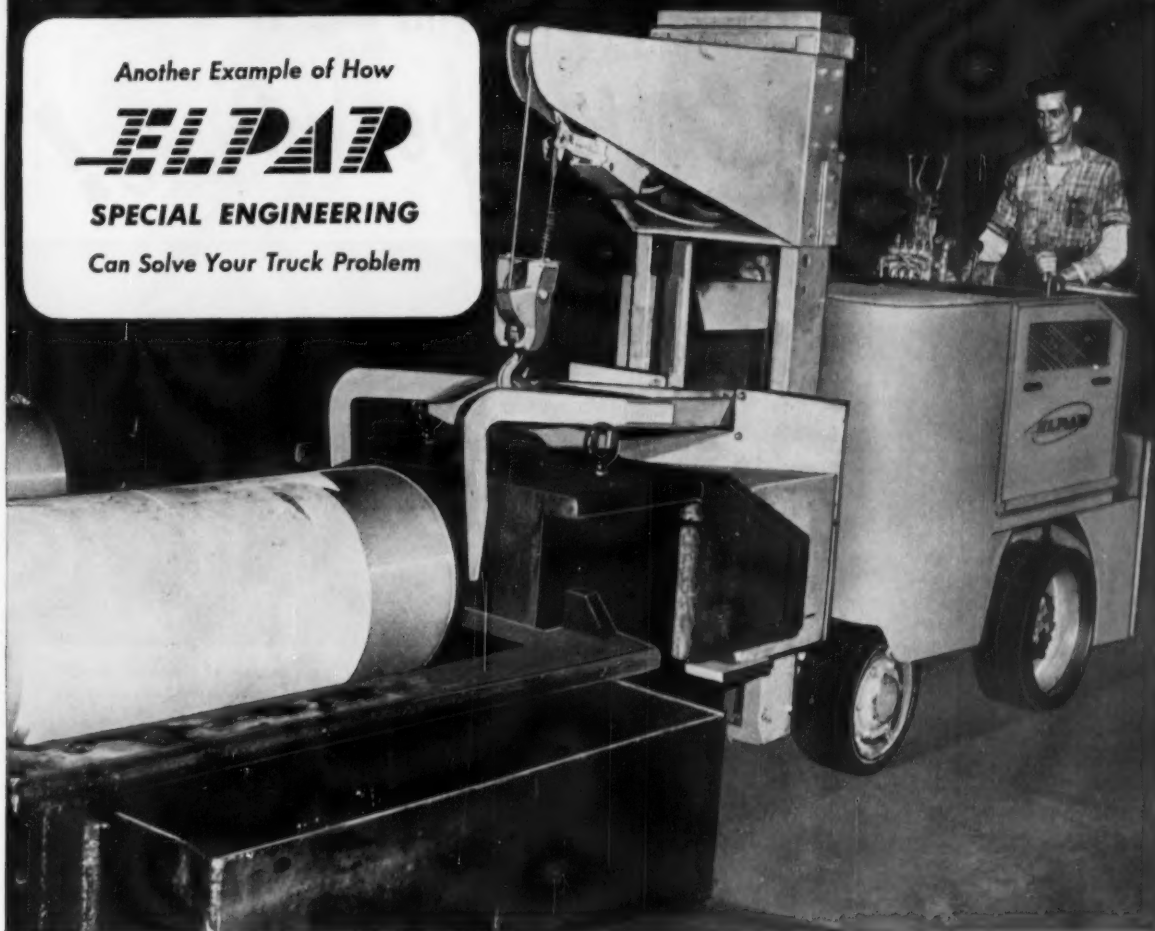
F. C. TAYLOR
American Trading Co. (Japan) Ltd.
No. 1 Shiba Park 7-Gochi
Minato-Ku, Tokyo

Another Example of How

ELPAR

SPECIAL ENGINEERING

Can Solve Your Truck Problem



Painless Extraction

The Problem

Steel mill needed a better, safer means of pulling bearings from ends of mill rolls . . . Job was done by a 75-ton bridge crane. This tied up a \$200,000.00 piece of production equipment on maintenance work. Also, there was danger when bearings stuck, for then the crane often pulled the entire roll out of the rack, slewing it across the floor.

The Solution

ELPAR ENGINEERS collaborated with mill personnel to adapt an ELPAR fork truck for bearing ex-

traction. The forks were replaced with a pair of arms and a ram, both hydraulically operated. As the ram pushes against the roll shaft, the arms readily pull off the bearings. When free they are carried by a boom and hook also added to the truck.

The Result

Bearings are extracted safely, smoothly, and under complete control at all times. Services of a valuable production crane are no longer required.

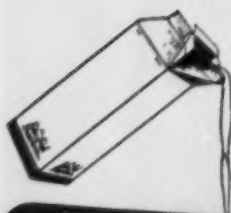
For your unusual load or handling

problem, take advantage of ELPAR Special Engineering. It is available without obligation when a standard ELPAR model will not suffice.

NEW BOOKLET

Explains this unique special engineering service in detail. Write The Elwell-Parker Electric Company, 4238 St. Clair Ave., Cleveland 3, Ohio.





**New Milk Packaging Machine
Fabricates, Sterilizes, Fills and Seals**

75 Cartons per minute!

DIAMOND CONVEYOR CHAINS

assure coordination of operations
and outstanding dependability on
EX-CELL-O's Pure-Pak Machine

● The new Pure-Pak carton snaps open quickly forming a pitcher-like spout that makes pouring easy and prevents spilling.

To make this carton, Ex-Cell-O developed completely new machines. The Model Q is the quart, pint or half-pint machine that turns out 75 cartons per minute. Handling that many cartons from flat, uncoated stock to finished, filled cartons demands precise timing, positive conveying and the utmost dependability.

Diamond Conveyor and Roller Chains can be the answer to your machinery and materials handling problems. Many attachment plates are standard and in stock. Special attachments made from various metals can be made to order. Diamond Engineers are ready and able to help you *now*.



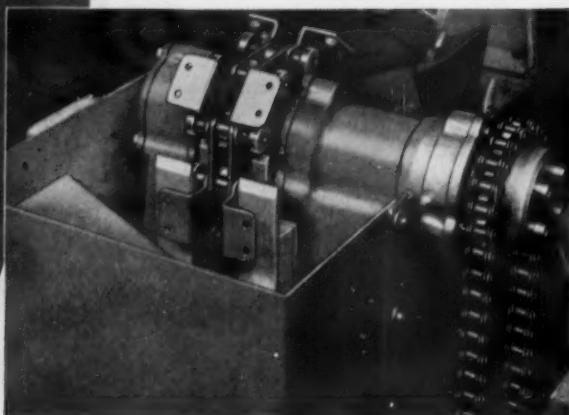
Catalog 34 contains specifications
and engineering data.
Write for your copy today.

DIAMOND CHAIN COMPANY, Inc.

Where High Quality is Traditional

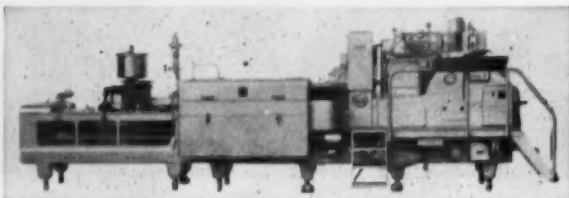
Dept. 624, 402 Kentucky Avenue, Indianapolis 7, Indiana
Offices and Distributors in All Principal Cities

Please refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER



Coating unit conveyor chain consists of bent lug attachment plates and outboard rollers mounted both sides on extended pins.

Below: Pure-Pak Model Q Machine



Diamond Conveyor Chain with
special lugs for handling as-
sembled cartons.

ALWAYS PRELOADED
For many, many years,
Diamond Chain has been
preloaded after assembly
for the purpose of bring-
ing pin-bushing seating into
stabilized relationship
prior to field installation.



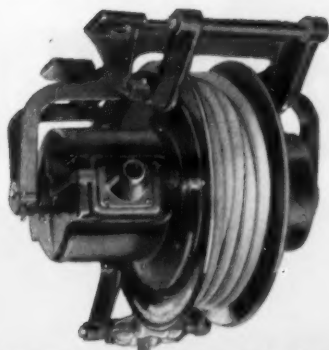
DIAMOND



**ROLLER
CHAINS**



Circle No. 38 on Reader Service Card for more information

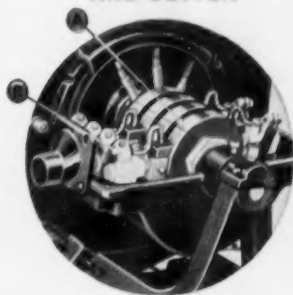


Constant, Trouble-Free
Traveling Power with . . .

**APPLETON
REELITE®**



**WHY APPLETON REELITES
ARE BETTER**



- Copper collector rings (A) are precision machined and have ample capacity to carry rated current.
- Brushes (B) are set in a floating tension assembly to maintain alignment and constant pressure.
- Grease-packed ball bearings and spring housing require no maintenance.



*No Shut Downs, No Man-Hours Lost! . . .
Power When and Where You Want It!*

APPLETON Reelites speed up production . . . with safety . . . because they pay out and retrieve power lines for moving machinery . . . eliminating tangled lines and broken or smashed lines.

In heavy industry, though moving power is important . . . tangled or broken power lines remain a constant source of trouble. In light manufacturing, moving power can be the main factor in achieving "automation." No matter what your power or capacity requirements are, there is an APPLETON Reelite to do a *constant, trouble-free* job year in and year out. Write for details today . . . you'll be glad you did!

Sold Exclusively Through Selected Wholesalers

APPLETON ELECTRIC COMPANY

1729 Wellington Avenue • Chicago 13, Illinois

Also Manufacturers of:



Rely on APPLETON . . . The Standard for Better Wiring

Circle No. 12 on Reader Service Card for more information

Union Bag Handles 6000 lb..



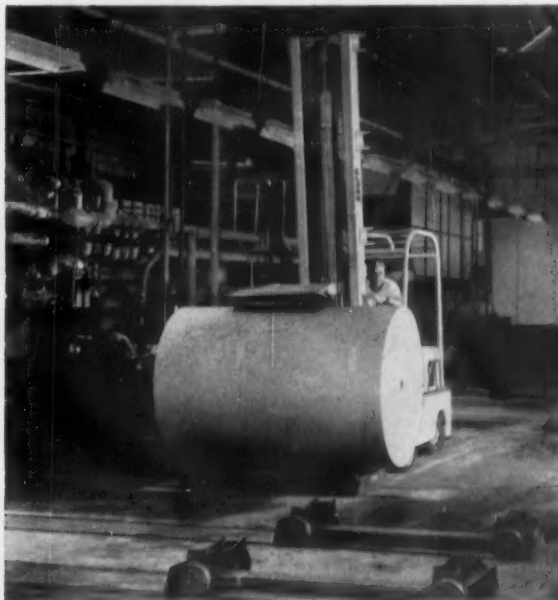
Vertical stacking cuts operating costs at the Chicago plant of Union Bag and Paper Corporation. Clark's New **Rotating Roll Clamp** handles 6,000 lb., 60" diameter rolls...stacks them to 26'8". The Rotating Roll Clamp has a 12" to 60" range, enables you to handle rolls in various sizes without changing devices or attachments.

Circle No. 32 on Reader Service Card for more information

..60" Rolls—DAMAGE FREE



Vertical loading of freight cars means capacity stock shipments—very little dunnage or stock damage. Clark's **Bartel Device** makes vertical shipments practical . . . has speeded unloading 1000%* at Union Bag.



Clark's new **Rotating Roll Clamp** speeds delivery from storage to corrugator, virtually eliminates stock damage. The versatile Rotating Roll Clamp will pick up rolls in either horizontal or vertical position . . . feed them to corrugator in proper unrolling position.

Here Are The Results At Union Bag

*Faster Car Unloading

Previously, it took two men and a fork truck 90 minutes to unload 11 rolls. Now one man and a Clark truck equipped with a Bartel device unload up to 20 rolls in 30 minutes. That's a 500% increase in production. . . with $\frac{1}{2}$ the manpower.

Reduced Damage

Using an ordinary fork truck, it was almost impossible to avoid damage to rolls. At times, the operator had to ram the roll to pick it up. Using Clark's Bartel Device for incoming stock, and the Rotating Roll Clamp for storage and transit, damage is practically eliminated.

Shipping Costs Reduced

Clark's Bartel Device has made vertical shipment practical. Result is greater payloads in

shipment. Vertically stacked, 72,000 lbs. can be shipped per car compared with 55,000 lbs. with horizontal stacking. Dunnage is practically eliminated . . . damage is virtually non-existent.

Plus . . . Union Bag reports increased storage space, easy stock segregation, efficient aisle space.

Repeat this operation in your plant. A call to your local Clark dealer will give you full details on Clark's *complete line* of attachments that can make your equipment more versatile . . . much more profitable.

**CLARK
EQUIPMENT**

Industrial Truck Division
**CLARK EQUIPMENT
COMPANY**
Battle Creek 13, Michigan

A BETTER BUY WITH LOCAL SUPPLY—*Genuine Clark Parts*

AUGUST, 1955

Get the jump on rising handling costs with **Union Metal** material handling equipment



HERE'S a perfect answer to your rising operating costs and narrowing profit margins. It's Union Metal engineered material handling equipment. Equipment that boasts a long and unequalled record of moving materials quickly, safely in unit loads, while decreasing production line delays and required storage area. You'll be time and dollars ahead with Union Metal rugged, durable skid platforms, boxes and pallets.

Write today for illustrated literature on industry's broadest line of Material Handling Equipment. Address The Union Metal Manufacturing Company, Canton 5, Ohio.

From the smallest shop boxes to huge production positioning hoppers.

UNION METAL

Material Handling Equipment

Circle No. 130 on Reader Service Card for more information

LETTERS to the editors

Small Town Operators Hurt By "Automation"

To FLOW:

I read with interest your article on automation in the June 1955 issue, and agree with all the facts. However, I think the writer was inclined to brush off unemployment resulting therefrom too lightly.

He speaks of the fact that "anyone would expect that the dial telephone was going to eliminate operators . . . Just the opposite has happened of course . . . number of telephone operators in this country has increased by 79 percent."

I am sure his figures are true, but they do not give the true picture.

This is a small town with little employment possibilities, especially for teen-agers. Last year our local telephone company installed dial phones. No operators are engaged now and three women and several high school girls who worked there now have no jobs.

There was some extra work for telephone men installing the system but they were from outside our community and their work is now completed.

I don't doubt that this situation is repeated wherever dialing is put in, and in a small community where we do not have long distance operators there are no alternate or additional jobs, as the writer implies.

(Mrs.) Jeannette M. Hlavin
Eatonville, Washington

It is unfortunately true that industrial or technological evolution almost invariably brings woe to a few, even though it serves the common good. It has been noted by top sociologists and economists that modernization of handling methods and machines has resulted in some displacement of workers, but that, for the most part, such

the
revolutionary
NEW
HYSTER
"MONOMAST"
with panoramic visibility

— the greatest basic lift truck development in 25 years —

OPERATOR VISIBILITY NEVER BEFORE POSSIBLE ON A LIFT TRUCK . . .

Exclusive "Monomast" *panoramic visibility* makes possible entirely new techniques in lift truck operation. Operators can work faster—with far greater safety.

SAFER, STRONGER, FASTER. "Monomast", unexcelled for work-productivity — five years in development — the product of thousands of hours of Hyster Proving Ground and actual job-testing with emphasis on stability, rigidity and strength.

Exclusive "Monomast" *panoramic visibility* and faster lifting speeds means faster approach, more accurate placing of loads, less package damage—*far more tons moved per hour.*

Unique "Monomast" construction, consisting of two box-shaped sections, one telescoping within the other, provides unexcelled strength, rigidity and safety.

Hyster® standard job-attachments, including hydraulic, can be used with the "Monomast".

SEE THE DIFFERENCE. Ask your Hyster Dealer for full information—he's listed in the yellow section of the phone book—or write direct.

Materials handling trucks from
1000 to 30,000 lbs. capacity.

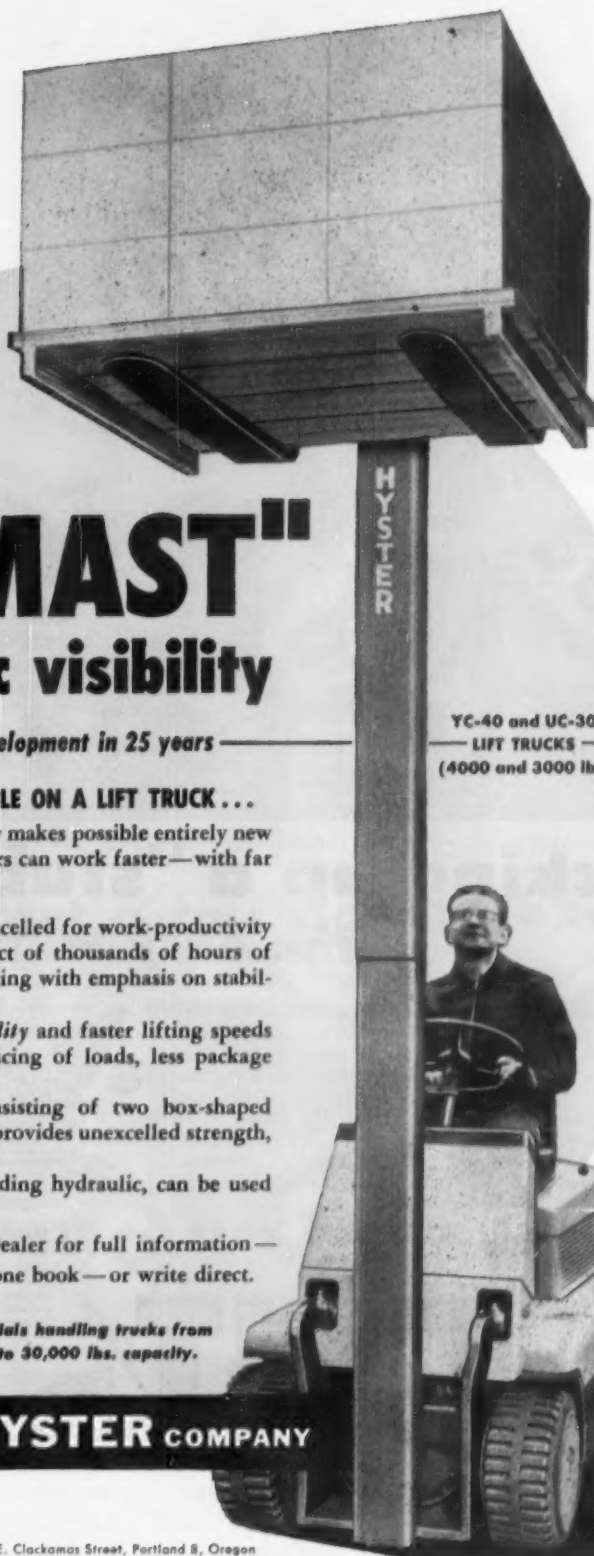
HYSTER COMPANY

2931 N. E. Clackamas Street, Portland 8, Oregon
1031 Myers Street, Danville, Illinois
1831 North Adams Street, EXPORT DIVISION, Peoria 1, Illinois
Hyster N.V., Nijmegen, The Netherlands

FOUR FACTORIES: PORTLAND, OREGON; DANVILLE, ILLINOIS; PEORIA, ILLINOIS; NIJMEGEN, THE NETHERLANDS

"MONOMAST" trademark registration applied for.

Circle No. 71 on Reader Service Card for more information



YC-40 and UC-30
LIFT TRUCKS
(4000 and 3000 lb.)



AUGUST, 1955



picking up a "stub" the easy way

Typical of the powerful "pick-up" ability of UNIT Cranes is the above performance . . . loading a giant aerial "fish" or tail-stub assembly onto a truck trailer. Inside this huge stub, two jet-like gasoline heaters will be installed, with heating capacity comparable to that required to heat 12 six-room homes! UNIT torque drive provides full, steady, nonstalling power . . . greater lugging power . . . elimination of shock loads on machinery. It will pay you to investigate these and other UNIT advantages. Write for Bulletin L-302.

UNIT CRANE & SHOVEL CORP.
6531 West Burnham Street • Milwaukee 14, Wisconsin



357 Mobile UNIT
the ONE-engine, ONE-man Unit . . . self-propelled, travels anywhere, rides on rubber, quickly convertible, fast, reliable.



**1/2 or 3/4 YARD EXCAVATORS... CRANES UP TO 20 TONS CAPACITY
CRAWLER OR MOBILE MODELS... GASOLINE OR DIESEL**



All Models Convertible to ALL Attachments!

Circle No. 134 on Reader Service Card for more information

A 7929-1/2-PC

LETTERS

Continued

displacement has been of a beneficent nature. Which is to say that workers have moved to upgraded jobs and pay rates and that many new job opportunities have been created. It is, however, understandably difficult to take a completely objective view of a situation in which you are among the few who suffer from it while the many benefit.

Interest High On Driver Training

To FLOW:

I would appreciate it very much if you would send me the information about the Norton Company "Driver Training Program" as described in your June issue.

P. R. O'Connor
United States Gypsum Co.
Chicago, Illinois

To FLOW:

Will you please arrange with the Norton Company to send me one or more (six if available) packets containing the written procedures, drawings of the obstacle course, written tests for drivers, etc. that they use in their driver training program.

I. E. Thomas
Ford Motor Company
Engine and Foundry Division
Dearborn, Michigan

To FLOW:

On page 74 of the June issue of FLOW, you mention packets containing detailed information about Norton Company's new electric truck driving program. Our safety engineers would like very much to have one of these packets.

Will you please send us one marked Attention: Library?

Louise Herrick
Oneida Ltd.
Oneida, New York

To FLOW:

In your recent June issue you carried an excellent article on the Industrial Truck Drivers Training Course being conducted at the Nor-



FAST-MOVING AUTO-SCOOPS move 24 tons per hour in Comanche, Texas plant of Central Texas Fertilizer Co., Inc.

Bulk chemicals get a fast ride in Texas

In the busy season, when Central Texas Fertilizer Company produces 2500 tons a month of its popular "Topper" fertilizer, it moves that bulk tonnage twice. One handling is from stockpile to mixing hopper; the second is from storage to bagging hopper. Two fast, maneuverable Jaeger Auto-Scoops are able to do both jobs. Individual bucket loads average 1000 lbs. Each machine averages about 240 loads per 10 hour shift.

If you have bulk materials, drums, bags or small parts to handle, in loads up to 1200 lbs., the 12 cu. ft. Jaeger Auto-Scoop is designed for your job. Fast—up to 13.88 mph in reverse, 7.66 forward. Nimble—6'6" turning radius. Powerful 33 hp @ 1800 rpm. Stable—independent bucket tilt-back permits carrying full loads within 4½ inches of ground. Can reach 2'7" ahead with dumping clearance of 4'6" under lip, 6'8" under hinge of bucket.

For complete information send for Catalog L12-4 and name of distributor who sells and services Jaeger Loaders in your city. For bigger work, Jaeger also offers the 1 cu. yd. Load-Plus with torque converter, power steering and either front-wheel or 4-wheel drive.

JAEGER LOAD-PLUS *auto-scoop*

The Jaeger Machine Company, 611 Dublin Avenue
Columbus 16, Ohio

Distributors throughout U. S., Canada and Principal Cities of World
AIR COMPRESSORS • PUMPS • MIXERS • PAVING MACHINES



LOADING BAGGING HOPPER: Ability to carry fully loaded bucket at low level protects operator from blowing material, improves stability, speeds dumping into floor hoppers.

Circle No. 76 on Reader Service Card for more information

AIM to unitize with



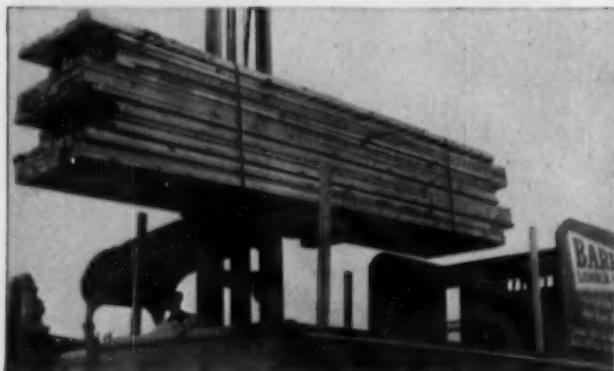
Unitizing of random length hardwood flooring permits quick and easy handling for storage. Idea 531



Steel landing mats for use by the armed forces are unitized for ease in handling. Idea 537



Automotive axles unitized for safe shipment and efficient handling with Acme Steel strapping. Idea 533



Unitized lumber is easily handled by fork truck from outdoor stocks to carrier. Idea 534



Self-palletized brick pack speeds up deliveries over former manual brick-by-brick loading. Idea 535

Circle No. 2 on Reader Service Card for more information

Acme Steel Strapping ideas . . . and save handling costs



Shipping many units strapped as one cuts loading and handling time to a minimum. Idea 536



Aluminum bar stock is self-palletized for easy handling in this unitizing idea. Idea 532

Unitizing—the art of preparing many packages or products into a single unit for handling—is proving to hundreds of manufacturers that shipping and handling costs can be cut—movements of materials speeded up. It's all in the application ideas brought about by the use of Acme Steel strapping and strapping tools . . . and the intelligence with which these ideas are originated and developed by your *Acme Idea Man. It's important to know, too, that unitizing isn't restricted to uniform squared-off packages; irregular product shapes and sizes can be unitized.

Talk to your *Acme Idea Man. He'll give you a shrewd analysis of shipping problems. You can reach him by calling the nearest Acme Steel office . . . or by using the coupon.

Remember—for you, the *idea* is the payoff.

ask your ***Acme Idea Man**
to help solve your problems

ACME STEEL PRODUCTS DIVISION

ACME STEEL COMPANY

2840 Archer Avenue, Chicago 8, Illinois



Get this new UNITIZING BOOK showing industrial unitizing ideas made possible by the use of Acme Steel Strapping. Fill out coupon on right.

ACME STEEL PRODUCTS DIVISION, Dept. LM-85

Acme Steel Company

2840 Archer Avenue, Chicago 8, Illinois

Please send me further information on Acme Steel's Safe, Lower-Cost Shipping Methods. I am interested in ☐ Steel Strapping; ☐ Wire Stitching; ☐ having an Acme Idea Man call on me.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

MERCURY

MOVES MORE TONNAGE FOR LESS



STACKING . . . Mercury "Yak" Model A-430 Fork truck tiers 4,000 pound loads to heights over 22 feet.



Low-Cost Vertical Stacking

Use every cubic foot of storage space. Stack to ceiling heights. Achieve lower costs and greater flexibility with Mercury "Yak" Model A-430 fork trucks. The "Yak" shown above is one of three serving nearly 3,000,000 cubic feet of storage space. In the Mercury "Fork Truck—Trackless Train" System, fork trucks at both terminals of the trackless train operation provides a real "short cut to a long haul."

Find out how MERCURY can effect important savings for your company. Write today for literature describing the advanced design features of Mercury's complete line of fork trucks, tractors and trailers.



Mercury fork trucks are available in a wide range of capacities and with all types of special attachments for every handling job. (Left) "Jeep" one ton capacity fork truck.

MERCURY MANUFACTURING COMPANY

4154 South Halsted Street • Chicago 9, Illinois

Circle No. 92 on Reader Service Card for more information

LETTERS

Continued

ton Company, Worcester, Mass. We would like to receive one of the packets containing the written procedure, drawings of the obstacle course, written tests, etc. which were mentioned to be available in limited numbers.

Although we do have a program to train drivers, I believe we can improve extensively after reading your article. Your generosity is deeply appreciated.

Henry Kvintus
Cornell Paperboard Products Co.
Milwaukee, Wisconsin

The foregoing are only samples of the many letters received requesting more information on the training of fork truck drivers. Obviously the tremendous interest indicates a need for more and better training. All letters have been referred to the Norton Company, and requests will be filled in the order received as long as the packets last.

Saw Pallet, Wants Same

To FLOW:

We have recently seen a unique fibreboard container with a base section that included durable paper tubes through which the forks of a lift truck may be introduced. It is understood this palletized container is capable of supporting substantial loads and eliminates the use of a conventional wooden pallet.

We are seeking information as to the manufacturer, and trust you can assist us in determining the identification of the source of supply.

C. C. Comstock
International Standard Electric Corp.
New York, N. Y.

Different ideas in pallets make the news almost every month. There are paper, plastic, aluminum, magnesium, steel, and of course, wooden pallets. Our reader has been furnished with the information requested.

directional
arrows

for
**MATERIALS
HANDLING**

Light,
General
and
Heavy Duty
**FREIGHT
ELEVATORS**

DUMBWAITERS

**HOISTWAY
DOORS**

MODERNIZATION

MAINTENANCE

**PASSENGER
ELEVATORS**

Otis

power trucks change the picture

It's necessary to change your thinking about freight elevators when you change from hand truck to power truck loading. A hand truck weighs about 500 pounds. Its relatively small pay loads are pulled into the elevator and distributed by hand. Full car loading is gradual. And the extra weight of the hand truck is unimportant. This type of traffic is easily handled by a conventional freight elevator. However, power truck loading completely changes this picture. A power truck may weigh 8,000 pounds, or more, plus its heavier pay load. It travels fast and stops quickly. Obviously, this type of traffic can be handled safely only in freight elevators and hoistways that have been specifically designed to take power truck "punishment"—as described in detail in Otis Heavy Duty Freight Elevators booklet B-705.

easily installed for light freight

Otis Light Duty freight elevators have a semi self-supporting framework that permits installation in new and existing hoistways without reinforcing the building, or adding overhead supports, or building a penthouse. They can be used for any rise up to 35 feet at a speed of 25 feet per minute with lifting capacities of 1,500, 2,000 and 2,500 pounds. They're described in Otis booklet B-720.

protective screen of safety

Otis engineers have developed a screen of safeguards around freight elevator entrances. A modern Otis freight elevator cannot be started until all car and hoistway doors are closed, and none of them can be opened while the car is moving through the hoistway. Doors can be opened only at a landing where the car is leveling or stopped. Power-operated Otis Hoistway Doors, for new or modernized installations, are described in booklet A-389.

freight elevators up-to-date?

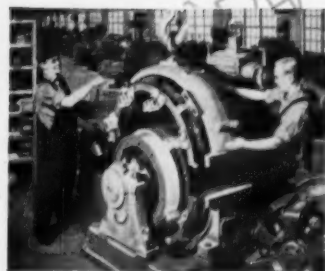
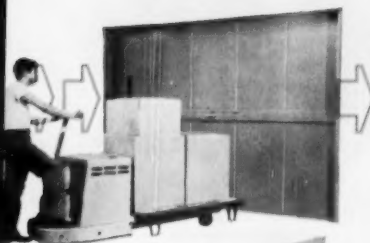
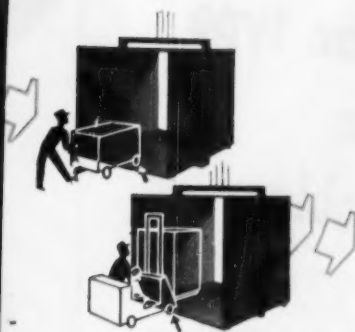
A modern freight elevator is an efficient, safe, production tool for reducing materials handling costs. You can have freight elevators where you want them, when you want them—with or without attendants. Our unmatched experience in all fields of elevating qualifies us to advise on standard use or on special adaptations of Otis freight elevators for completely automatic production lines. This experience is available for any size installation, however large—or small!

the heart of the installation

You can look to your Otis gearless hoisting machine for almost endless service. You'll never wear it out. We'll tell you why. Otis machines are not adaptations of standard commercial equipment. They're specifically designed to meet the unique requirements of elevator service. All parts are built in Otis plants under rigid quality control. Another reason why the Otis trademark is the symbol of the world's finest elevators.

OTIS ELEVATOR COMPANY, 260 11th Ave., New York 1, N.Y.
OFFICES AND SERVICE IN 295 CITIES ACROSS THE U. S. AND CANADA

Circle No. 103 on Reader Service Card for more information



SIMPLICITY . . . balanced pan type conveyors can solve your materials handling problem

**From powdered coffee to hot castings,
materials are better handled on
Simplicity conveying
equipment**



This balanced
pan type Model
32A Conveyor
will fit where
space is minimum,
allow more
headroom, and need
little supporting
structure.

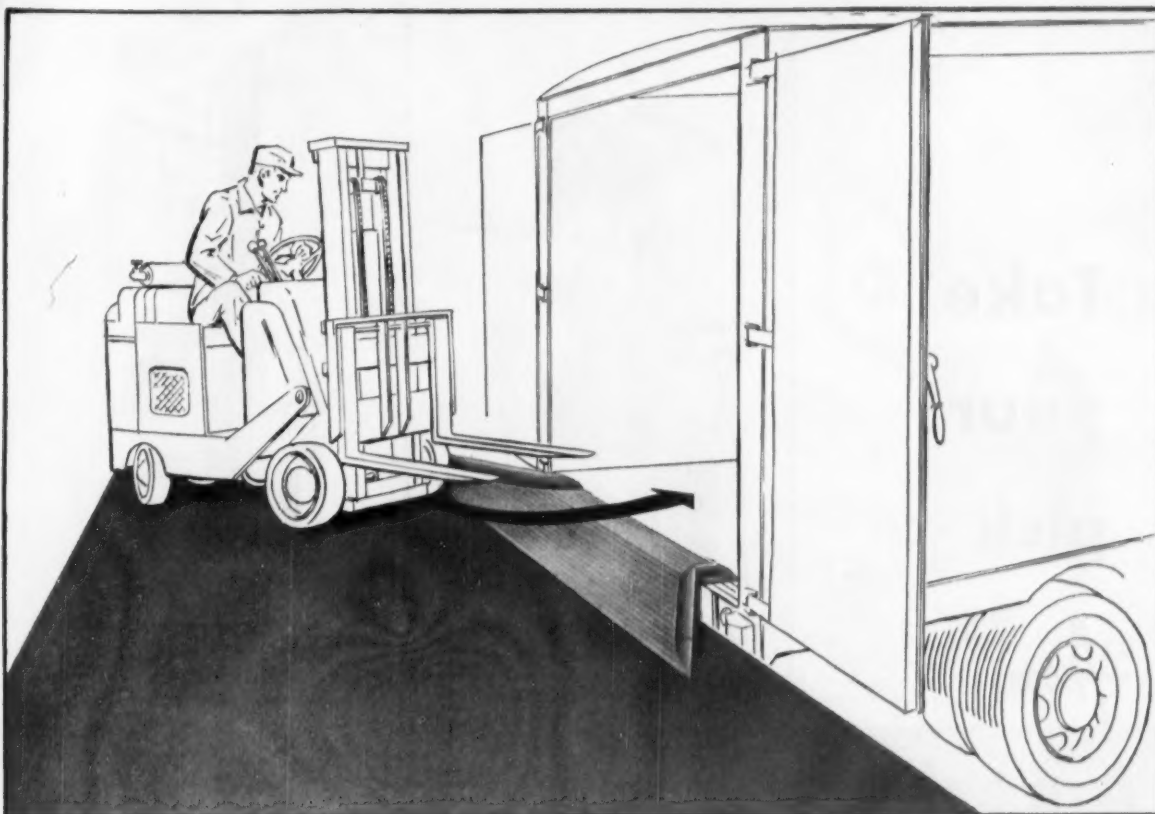
Simplicity feeders and conveyors are speeding up the handling of materials and doing a better job in food and chemical processing plants, foundries, mines, quarries with the Simplicity balanced pan type conveyors. Simplicity units have replaceable liners, single or double carrying surfaces, and may be equipped with grizzly deck, screen cloth, or perforated plate for scalping or screening. These units are available in a large variety of sizes to suit your individual materials handling problem. They will provide you with steady product flow . . . when you want it and where you want it.

SALES REPRESENTATIVES IN ALL PARTS
OF THE U.S.A.
FOR CANADA: SIMPLICITY MATERIALS
HANDLING LIMITED, GUELPH,
ONTARIO
FOR EXPORT: BROWN AND SITES, 50
CHURCH ST., N. Y. 7, N. Y.

Simplicity
TRADE MARK REGISTERED
ENGINEERING COMPANY • DURAND 5, MICHIGAN

158

Circle No. 119 on Reader Service Card for more information



Flared Magcoa Dockboard solves sharp-turn problem on narrow truck dock; permits safe, easy turn which was previously impossible.

Many congested-truck-dock problems solved by flared Magcoa Magnesium Dockboards

Lift truck turning problems created by narrow docks are solved quickly by Magcoa flared Dockboards. Even big, wide truck docks sometimes get clogged with loads and equipment—it happens in the best of companies! Here, too, a Magcoa flared Dockboard is usually the best solution.

Flared construction eliminates the need for sharp right-angle turns which are always awkward and dangerous—and are sometimes completely impossible. Magcoa flared construction permits the operator to do most of the turning *while on the Dockboard*. It's like having a wider dock to turn on. This means quicker, safer truck loading and unloading.

The exclusive Magcoa angle stop *under the Dockboard* holds it positively in place during loading, yet needs less than an inch of space between truck and dock. You back up to the dock only once . . . set your brakes . . . position your Magcoa Dockboard . . . and start loading or unloading!

Every Magcoa Dockboard is constructed of magnesium, the lightest

of structural metals. Every Magcoa Dockboard has the patented hand holds, quarter-round safety curbs and other safety features which have made Magcoa Dockboards famous.

Other Complications? If your truck dock is too high or too low, as well as being too narrow, your Magcoa Representative can furnish a Dockboard which solves both problems at once.

Rail Dock Turning Problems? On narrow, congested rail docks, too, flared construction is one of several Magcoa features which can help you get the loading and unloading job done with maximum speed and safety. Problems such as low equipment under-clearance and narrow rail car door openings can be solved at the same time.

What's Your Loading Problem? A narrow, congested dock? A low dock? Inefficient loading from ground level? Spilling or damaging loads? Planning the dock for a new plant or warehouse? Modernizing an old dock? Switching to hi-capacity lift trucks or pallet trucks?

Whatever the loading problem, the odds are 1000 to 1 that your local Magcoa Representative has encountered it and solved it before.

A Suggestion—Send for our free new bulletin, "What to do about Difficult Docks." It's loaded with practical, helpful ideas.

MAGNESIUM COMPANY OF AMERICA

MATERIALS HANDLING DIV.
EAST CHICAGO 1, INDIANA

Representatives in principal cities



IN CANADA—Magcoa Limited,
277 Kipling Ave. South
Toronto 14, Ontario

☐ Please send "Difficult Docks" bulletin

Name and Title _____

Company _____

Address _____

City-Zone-State _____

Copyright, 1955, Magnesium Company of America.

Circle No. 88 on Reader Service Card for more information

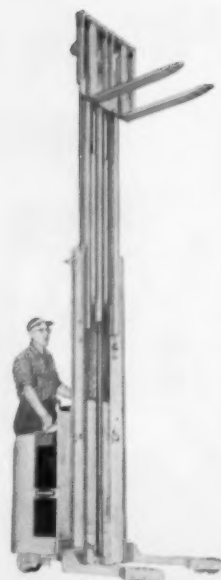
**Take
your
pick**

from



REACH-FORK TIERING TRUCK

Operates in 6' aisles* with existing racks and pallets. Telescopic, Non-telescopic models. 2,000; 3,000 lb* cap.



STRADDLE TYPE TIERING TRUCK

Right angle tiers from 6-ft. wide aisle*. Telescopic and Non-telescopic models. Capacities: 2,000; 3,000, 4,000 lbs.*

America's most complete line

Designed by



**the firm
that made
6-ft. AISLES
a reality**

NEW LEASE-PURCHASE PLANS

Three new plans make it easy for you to own or lease any RAYMOND Electric Truck. Let our representative tell you how you can rent or purchase over 1 to 3-year periods.

● **Make your next industrial truck a RAYMOND . . .** and gain up to 50% more floor space for production or storage. These rider-type trucks make unbelievable space-savings possible because they operate in aisles previously accessible to hand trucks alone. Moreover, they're offered in a wide range of models for a hundred and one handling jobs.

COMPARE THESE FEATURES

CAN OPERATE IN 6 FT. AISLES*

due to short length and patented off-set drive wheel with 200° turning arc. Patent No. 2,564,002.

INCREASE FLOOR SPACE

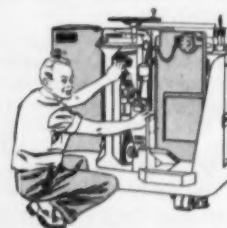
as much as 50% by maneuvering in aisles 4 to 6 ft. narrower than counterweighted trucks require.

SIMPLE TRAVEL CONTROL

one lever controls all 3 forward and reverse speeds.

ACCESSIBLE POWER UNIT

completely accessible . . . easy to service because all parts housed behind hinged double doors.



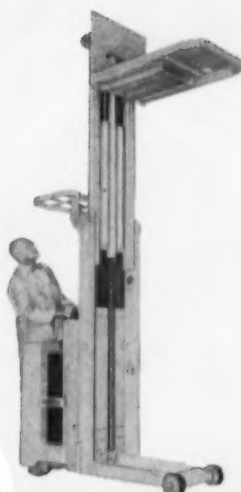
*For exact aisle width, ask the Raymond representative to survey your operation.

Circle No. 107 on Reader Service Card for more information



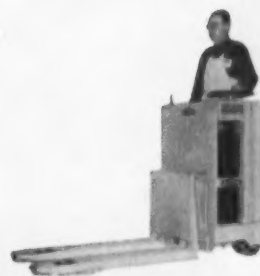
SINGLE-FACE PALLET TRUCK

Designed for single-face pallets, yet works equally well with skids. Tiers in 5½-ft. aisles. Telescopic, Non-telescopic models. Cap: 2,000-3,000 lbs.



PLATFORM TYPE TIERING TRUCK

For production floor use plus warehousing, shipping. Stacks in 5-ft. aisle. Telescopic models: 2,000; 3,000; or 4,000 lb. cap. Non-telescopic models: 2,000; 4,000 lb. cap.

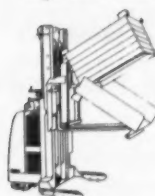


LOW-LIFT TRUCK

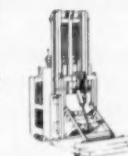
Fast lateral mover because it's a rider-truck. Can operate in 5-ft. aisle. Pallet truck shown. Also available in platform model. Capacity 4,000 lbs.

of narrow-aisle electric trucks

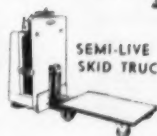
Raymond trucks for special applications



DROP BOTTOM BOX TRUCK



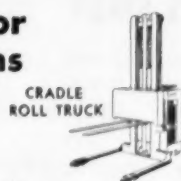
DIE HANDLING TRUCK



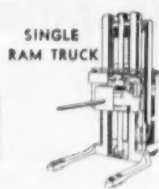
SEMI-LIVE SKID TRUCK



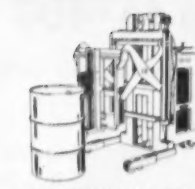
PAN TYPE TRUCK



CRADLE ROLL TRUCK



SINGLE RAM TRUCK



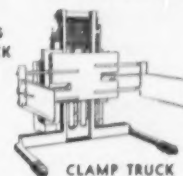
BARREL HANDLING TRUCK



POWER TILT TRUCK WITH CHISEL FORKS



REVOLVING HEAD TRUCK



CLAMP TRUCK

WITH ANY OTHER TRUCK...

EASY STEERING

thanks to large wheel and steer mechanism with 100% anti-friction bearings.

LIGHTER WEIGHT

because no counterweight is needed. Operate safely on low-capacity elevators and floors.

DEPENDABLE BRAKE

mechanical brake, spring applied. Simple construction enables brake to be applied gradually.

EASY BATTERY REMOVAL

single battery gate and rollers for easy side removal of battery.

SAFE RIDING

operator's legs fully protected. Ample standing room with sponge rubber floor and leg pads.

Clip & Mail

The RAYMOND CORPORATION

3376 Madison St., Greene, N.Y.

☐ Please send latest Electric Truck Catalog

☐ Please have a RAYMOND representative call

NAME _____ TITLE _____

COMPANY _____

STREET _____

CITY _____ STATE _____



new Baker

SHOVELoader

saves up to \$400 on initial cost

Now you can mechanize your bulk handling operations for less than \$10.00 per day for one year . . . much less than you pay a laborer with a hand shovel!

This rugged Model 20 SHOVELoader has a lifting capacity of 1500 pounds, and lifting height of 7 feet. Standard bucket size is 12 cubic feet. Loader arms are in front of operator—not around him—protecting him from injury and providing full 360° visibility at all times.

Four forward speeds with top travel speed of 14 MPH make this a fast machine and insure better operation on ramps and rough ground conditions.

Bucket tilt-back at ground level means a full load at every grab, and permits low carrying position for travel. Other advantages are longer forward reach, greater longitudinal stability, extremely low maintenance because of easy accessibility of all parts requiring service, and design of the husky, trial-proven engine.

Special attachments are available for special jobs—forks for palletized loads, crane hooks for hoisting, and special buckets for dense materials. Catalytic exhaust system is available for inside work, where required.

Compare these and SHOVELoader's many other features with loaders costing \$350 to \$400 more! Write for complete information. The Baker-Raulang Company, 1219 W. 80th St., Cleveland 2, Ohio.

Baker
HANDLING EQUIPMENT

Circle No. 17 on Reader Service Card for more information



• A new trade association representing the interests of woven fabric belting manufacturers has been incorporated in the state of New York. Called the Woven Fabric Belting Manufacturers Association, Inc., headquarters are maintained at 27 William Street, New York City. Objectives of the group are (1) To promote standardization and simplification within the industry; (2) To collect, compile and disseminate statistics and other information with respect to matters relating to the industry; (3) To cooperate with governmental agencies; (4) To represent its members and the industry before governmental agencies and the public. Directors of the board include: John F. Beecher, Globe Woven Belting Co., Inc.; H. E. Burns, Buffalo Weaving & Belting Co.; I. L. Rush, Victor Balata & Textile Belting Co.; Homer S. Toms, The Franklin Cotton Mill Co., and Julius D. Walters, The Russell Manufacturing Co.

• Board members of the Canning Machinery & Supplies Association held their annual spring meeting at association headquarters in Washington, D.C., June 20. Reports were heard from various committee members, and plans were discussed for the 1956 exhibit to be held in Atlantic City.

• The New Jersey Chapter of the American Material Handling Society, Inc. elected Davis Greene president for the year 1955-56. Herbert Goldstein is vice president and H. H. Lemmerman is secretary and

5582

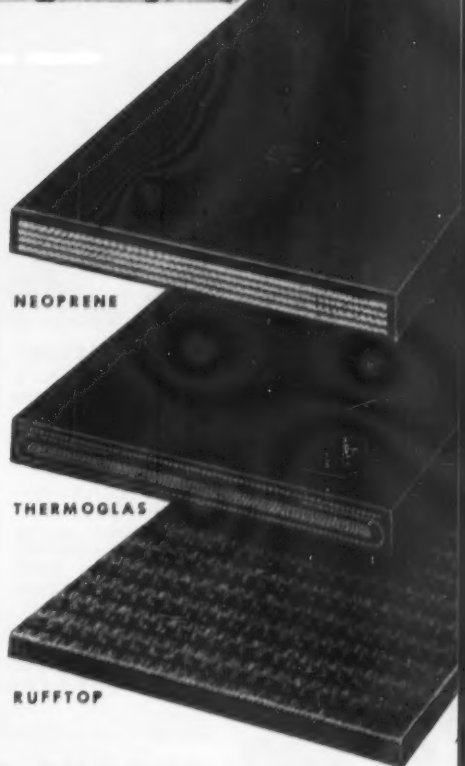


Thermoid Conveyor Belting cuts your handling costs



There's a Thermoid Conveyor Belt designed to lower your costs on every type of materials handling job. Each is best suited for the particular type of service recommended. Here are 3 selected from the complete Thermoid line: **NEOPRENE**—built especially for conditions where heat and oil are encountered; **THERMOGLAS**—designed for use where belt is exposed to temperatures of 275° to 350° F.; **RUFFTOP**—Thousands of irregular gripper points guide smooth surfaced articles up inclines to 35°.

Thermoid's exclusive impregnation process welds carcass and cover into an exceptionally strong, durable belt. Finest quality reinforcement and specially compounded rubber stocks assure long life, less down time, lower handling costs. Your Thermoid Distributor carries a full line of Thermoid Conveyor Belting, Hose and Multi-V Belts to meet your most exacting requirements. He maintains complete stocks and can give you fast service. If you prefer, write direct.



Thermoid

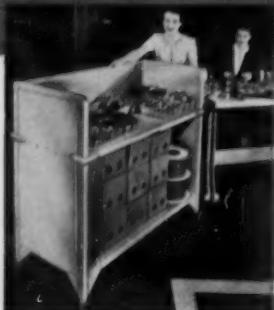
Conveyor & Elevator Belting • Transmission Belting
F.H.P. & Multiple V-Belts • Wrapped & Molded Hose

Rubber Sheet Packings • Molded Products
Industrial Brake Linings and Friction Materials

Thermoid Company • Offices & Factories: Trenton, N. J., Nephi, Utah

**SAVE TIME...SAVE MANPOWER...
REDUCE ACCIDENT RISK WITH—**

MINIMAX Pusharounds



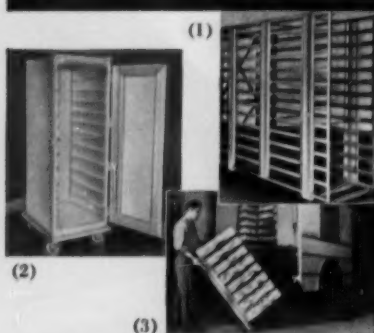
FOR LIGHT MANUFACTURING

Factory push-vehicles that carry lightweight parts and materials sometimes weigh more than the loads they carry. This B&P Shelf Truck carries a cargo for an electrical product assembly line. Shelf Truck models weigh from 37 to 78 lbs. This model, also Platform and Bin Trucks, are available for 500-lb. and 1200-lb. loads.

They are made of Magnesium the lightest weight structural metal. Steel is four times heavier; aluminum is 50% heavier.

Pusharounds are rugged and durable. They won't rust. Unaffected by alkalis, they are easily cleaned. They cut dead weight sometimes as much as 75%. This may mean a single pusher where two were needed—or a girl pusher instead of a man.

Magnesium Pusharounds were originated by B&P. They save important money in many applications, many industries. B&P makes many standard models such as those shown here; "specials" can be made up reasonably.



THREE MODELS FOR BAKERIES

(1) **SAVES TWO TONS IN A TRAILER LOAD!** Magnesium Bakery Transfer Rack for long distance hauls weighs only 179 lbs.; replaces similar steel racks weighing 450 lbs.

(2) **NO DUST—NO DIRT—NO FLIES.** Lightweight Magnesium Bakery Delivery Cabinet carries trays for unwrapped cakes, cookies, rolls. Easily handled by the truck driver making plant - to - store deliveries.

(3) **EASY ON THE DRIVER.** This Hand Truck weighs only 21 lbs.; same truck in steel, more than 75 lbs. It folds and stows flat.



FOR DEPARTMENT STORES

Here are three of several models, all so light that they are easily handled by a girl. Garment rack Pusharounds stay on the retail floor. Transfer models carry merchandise from warehouse to store, available with or without locks.

Send for this B&P file folder. It contains specification sheets on standard models.



Distributors in Principal Cities

BROOKS & PERKINS, INC.

1944 West Fort St. • Detroit 16, Mich.

Circle No. 25 on Reader Service Card for more information

ASSOCIATIONS

Continued

treasurer. The board of directors includes: C. W. Stanley, R. H. Graves, A. N. Jolliffe, W. T. Caskie, A. E. Schmidt, Jr., A. J. Van Benschoten, Jr., F. B. Dahlinger, B. J. Kopp.

● **Atlantic City's Convention Hall** will be the scene of the American Management Association's 25th National Packaging Exposition. Scheduled for April 9-12, Richard Wellbrock, vice president of New Jersey Machine Corporation, has been reappointed chairman of the Exhibitors' Advisory Committee. The silver anniversary exposition will offer graphic evidence, A.M.A. spokesmen predicted, of the packaging industry since 1931.

● **An Award of Merit** was presented to James McGinn of American Viscose Company by the Philadelphia Chapter of the American Material Handling Society, Inc. McGinn is a charter member and past president of the Society, and the award was "in consideration of outstanding service in the field of material handling and work in connection with the Philadelphia Chapter". He was also awarded a National Certificate of Merit. Six other awards, totaling \$400, were made by the Chapter for papers prepared on material handling. Three went to chapter members and three to college students.

● **Fifteen hundred mechanical engineers and guests** are expected to attend a five-day convention of the American Society of Mechanical Engineers in Chicago, November 13-18. Headquarters for the event is the Conrad Hilton Hotel. James D. Cunningham and Alex D. Bailey have been named co-chairmen of the 75th anniversary annual national meeting.



Crane Arm



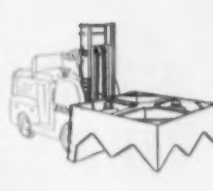
Hydraulic or
Mechanical Scoop



Side Shifter



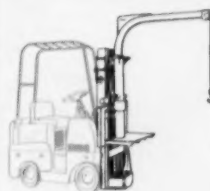
Revolving Carriage



Multiple Drum Carriage



Dual Telescopic Mast



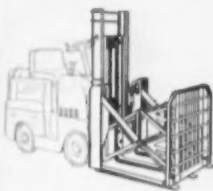
Cotton Boom



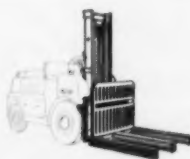
360° Rotating Carriage
and Clamp



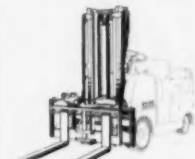
Ram



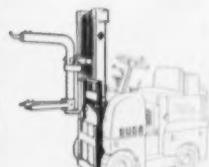
Unloader



Brick and Block Forks



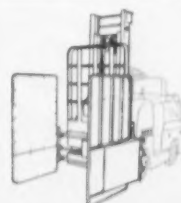
Swing Shift



Garrett Breakout



Load Stabilizer



Carton Clamp

**ALLIS-
CHALMERS**
(BUDA)

**NO MATTER WHAT THE MATERIAL
OR TYPE OF LOAD,
A-C BUDA FORK LIFT TRUCK
ATTACHMENTS CAN HANDLE IT!**



Clamps



Extension Package Rack

Here's another reason why A-C Buda Fork Lift Trucks can help break production records in your plant! Whatever the material, A-C Buda can handle it with attachments designed for the specific job. Bales, boxes, bundles, drums . . . crates, bulk materials, heavy machinery . . . coal, sand, gravel, castings . . . sheet, wire, strip rod, reels, rolls — A-C Buda handles them all! Shown here are only several of the many Buda attachments. A-C Buda design is completely flexible to meet your specific problems.

Send for Facts Book Today.
See A-C Buda in action and put yourself in the driver's seat.
Send for free 36-page facts book!



ALLIS-CHALMERS MANUFACTURING COMPANY

BUDA DIVISION • HARVEY, ILLINOIS



FORK LIFT TRUCKS



INDUSTRIAL TRACTORS



PLATFORM TRUCKS

Circle No. 26 on Reader Service Card for more information

NEWS VIEWS TRENDS

MILITARY-INDUSTRY SYMPOSIUM SET

"What is new? What is needed?" will be the theme of the first Joint Military-Industry Symposium on Packaging and Material Handling to be held in Washington, D. C., October 10-12. New military and industry developments in materials, methods, procedures and equipment will be described and displayed during the three day session. Hundreds of military and industry packaging and material handling specialists will be present for the event and prepared to answer questions on government requirements proposed by industrial conferees. Firms desiring to make presentations on new developments in the field, and individuals wishing to suggest questions for round-table discussions, should contact the Chief of Naval Materiel, Washington 25, D. C. Information not placed on the agenda will be referred to the military activities most vitally interested in the subject.

UNION STEEL BUYS COLSON-SERVICE ALBION PLANT

Land and buildings vacated in Albion, Michigan, by the Colson-Service Division of the Colson Corporation have been purchased by Union Steel Products Company. The purchase will add approximately 84,000 square feet of manufacturing space to Union Steel's main plant, according to President and General Manager W. Clark Dean. Operations of the former Service Caster & Truck Corporation plant were transferred to Elyria, Ohio, late in 1954, after its acquisition by Colson.

A-C REALIGNS

Realignment of its operating divisions to meet increased demands of growing markets has been announced by Allis-Chalmers Manufacturing Company. J. L. Singleton will head the industries group, formerly known as the general machinery division, and W. G. Scholl will direct the tractor group, formerly called the tractor division. Both men are vice presidents and company directors. The various divisions and their heads are: J. W. McMullen, power equipment division; P. F. Bauer, industrial equipment division; William M. Wallace, general products division; L. W. Davis, farm equipment division; Boyd S. Oberlink, construction machinery division; and R. K. Mangan, Buda division. R. M. Casper will become administrative assistant to J. L. Singleton. President Robert S. Stevenson said the move would "serve to strengthen our position in the markets we serve and provide faster direct line service to our customers. Internally, this move will simplify administration and serve to broaden and deepen our executive strength."

MOTOR COMPANY EXPANDS FACILITIES

Plans for the erection of 63,000 square feet of additional manufacturing floor space at its Atlantic plant were made known by U. S. Electrical Motors Inc. Constructed in 1940, the Milford, Connecticut, plant has a total of more than 140,000 square feet of modern factory and office space located on a 65 acre tract. According to company officials, the original Milford plant was expected to be adequate for at least two decades, but an extensive expansion program was undertaken and completed in 1949, and a substantial increase in business in the years since has created the present need for additional facilities. Headquarters plant of the 47 year old motor manufacturer is located in Los Angeles, California.

Why a **Master** truck is your best fork truck buy —

1 Electric power gives
3 times longer life than
gas trucks

2 Lubricated-for-life —
never needs greasing —
absolutely no under
truck adjustments

3 1/3 the operating
and maintenance cost
of gas trucks

4 Magnetic controls —
no clutch — operate
one lever to change
speed and direction

5 Standride operating
position for faster, safer,
more comfortable forward
and reverse operation

6 Center control and
one-step-high thru-truck
aisle for easy mounting
from either side



7 Travel speed up to
6 MPH for maximum
efficiency plus safety

8 40 FPM lift speed
(with full load)
50 FPM lowering speed

9 Capacities through
4000 lbs.
148" load length

L-S SPACEMASTER MODEL "E" ELECTRIC

IN ADDITION to the 9 points of superiority (above) of L-S SpaceMaster Electrics, there are many more reasons why Master Line Trucks are the best buy on the materials handling market.

Here's one. Lewis-Shepard offers *every type of truck made* — from lightweight two-wheelers to huge fork lifts. You get the extra convenience of "one-stop shopping" for *all* your truck needs. And you get all the benefits of standardizing on one make of equipment.

Here's another. Because your local L-S Representative has a *complete* line, he's in a better position to advise you . . . he's not biased in favor of one particular type of truck or design. So, for the most economical solution to your handling problems, buy from the only *complete*

line of trucks on the market . . . the Lewis-Shepard Master Line! For catalogs describing SpaceMaster Model "E" Electrics or the complete Master Line, mail the coupon . . . **TODAY!**



LEWIS-SHEPARD

138 Walnut St., Watertown 72, Mass.

Please send L-S SpaceMaster Model "E" Catalog No. 32
L-S Master Line Catalog

Name _____ Title _____

Company _____

Address _____

City _____ State _____

Circle No. 83 on Reader Service Card for more information

**CATERPILLAR STAGES
IMPRESSIVE SHOW**

Every state in the Union, every province in Canada and almost every nation of the free world was represented at a Caterpillar Tractor Company dealer organization meeting in Peoria, Illinois, June 6-17. Said to be the most impressive exposition that industry has ever witnessed, the group viewed both current and future models of earthmoving equipment. Demonstrations by equipment totaling several million dollars were conducted at Caterpillar's 800-acre proving ground. President Harmon S. Eberhard said in an address that "1955 will be a year of unusual importance insofar as the introduction of new and improved Caterpillar machines is concerned. . . . Never before in a similar period in our history have we seen results of so much engineering and research work translated into product realities as will be achieved this year."

**HEPPENSTALL
STEPS AHEAD**

Greatly enlarged and improved facilities for the design and manufacture of material handling equipment have been placed in service by Heppenstall Company in New Brighton, Pennsylvania. The new plant includes a manufacturing building, covering more than 60,000 square feet, and a two-story office building which houses the engineering and sales departments of the material handling equipment division.

**CHICAGO TRAMRAIL
GETS NEW QUARTERS**

Chicago Tramrail Corporation has moved into a completely new and modern service building at 1330 South Kostner Avenue, Chicago. Designed to facilitate prompt service in the Chicago area, the building has 12,000 square feet of working space and features an enlarged and expanded engineering and experimental division.

**BAKER-LULL
MOVES TO OHIO**

The Bloomington, Minnesota, plant of Baker-Lull Division of Baker-Raulang Company will be closed on or about September 30, and the remaining manufacturing and service operations transferred to the Baker-Raulang plant in Cleveland, Ohio. President William A. Bauer said the decision was dictated by the substantial economy attributable to consolidating operations in a single plant.

**BIGGER,
BETTER
BOSTITCH**

Plans revealed by Bostitch, Inc. tell of a proposed move of the company's main manufacturing plant and general offices to East Greenwich, Rhode Island, where a new and larger factory will be built. President Emmet G. Gardner said the move is necessary because of heavy production demands resulting from sales which have increased 450 percent since 1945. The new structure will be erected on a 90 acre land tract, and is expected to be completed by the autumn of 1956.

**MAGCOA BIDS FOR
CANADIAN TRADE**

Formation of a new Canadian subsidiary, Magcoa Limited, has been revealed by Magnesium Company of America. Miles L. Abel, executive vice president of the new subsidiary, said that growth of Canadian industry, with resulting growth of the market for its products, were prime reasons for formation of the new manufacturing outlet which is located at 277 Kipling Avenue South, Toronto.

NEW

6 TON, SELF-PROPELLED



BANTAM!

IT SELLS FOR ONLY

\$11,500

**look what
you get in the
new CR-35!**

- Independent Travel, Forward and Reverse
- Turns INSIDE 40' Circle
- 360° Full Circle Swing
- Power Up & Down Boom Hoist
- Hydraulic Precision Steering
- All-Vision Cab
- Works with 9 different Attachments!

**Model
CR-35**



* AS SHOWN with crane boom, outriggers, hook block (less boom safety stops), f.o.b. Waverly, Iowa.



T-35A

C-35A

NO OTHER MACHINE of this size has ever offered so many time and money saving features! Lifting big loads . . . maneuvering in tight spots where other rigs can't go, the New BANTAM will let you realize greater speed and economy than you thought possible. You can't afford NOT to investigate the revolutionary New CR-35! WRITE TODAY for a completely illustrated, file-size brochure containing all the facts about the BANTAM CR-35 and how it can cut your materials handling costs!

CARRIER OR CRAWLER BANTAMS are outstanding performers, too! Mobile Carrier Bantam ideal for scattered assignments . . . travels up to 40 MPH! Crawler Bantam works in bad ground conditions where other rigs can't go . . . features 2-speed independent travel!

World's Largest Producers of Truck-Cranes and Excavators



SCHIELD BANTAM COMPANY

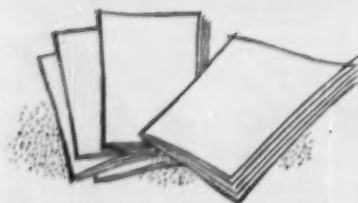
251 Park Street, Waverly, Iowa

Please send me the **FREE** Brochure on Materials Handling with a Bantam!

Name _____
 Title _____
 Company _____
 Address _____

MH-2

Circle No. 115 on Reader Service Card for more information



CATALOGS

offered in

Hoists... Big hoist quality with small hoist economy is pointed out by Robbins & Myers Inc. in bulletin 851-B.

Circle 111 on Reader Service Card

Elevators... Facts on light, general and heavy duty freight elevators are contained in news from Otis Elevator Co.

Circle 103 on Reader Service Card

Door Opener... Literature from The Nolan Company tells about a low cost one man car door opener.

Circle 102 on Reader Service Card

Cranes... Catalog offered by The Euclid Crane & Hoist Co. gives information on cranes specifically adapted to the peculiar needs of practically every industry.

Circle 49 on Reader Service Card

Protective Wrap... Booklet titled "Sof-Rap" by Nichols Paper Products Co. tells about a flexible wrap material for product protection.

Circle 101 on Reader Service Card

Drum Handling Devices... Merrill Brothers has available information on drum handling devices.

Circle 93 on Reader Service Card

Racks... Catalog 600 available from Unistrut Products Co. lists countless examples of how to build racks for every purpose.

Circle 133 on Reader Service Card

Metal Skids... Illustrated literature published by The Union Metal Manufacturing Co. gives an answer to rising operating costs. Metal skids, boxes and pallets are depicted.

Circle 130 on Reader Service Card

Conveyor Belting... Information is offered by Thermoid Company on conveyor belting to cut handling costs.

Circle 124 on Reader Service Card

Work Positioner... Folder from American Machine & Foundry Company shows how Lowerator self-leveling work positioner maintains a constant and higher rate of production.

Circle 7 on Reader Service Card

Fork Trucks... Catalog 32 offered by Lewis-Shepard Products Inc. gives specification and other data on the Model E electric fork truck.

Circle 83 on Reader Service Card

Stand-Up Gas Truck... Lamson Mobilift Corporation offers complete information on its stand-up gas operated fork truck, said to be more agile in tight corners.

Circle 81 on Reader Service Card

Air Hoist... New speeds and capacities of air hoists are described in literature available from Keller Tool Division of Gardner-Denver Co.

Circle 75 on Reader Service Card

Packaging Material... Free pack specifications and cost estimate for your product is offered by Armour and Company.

Circle 13 on Reader Service Card

Electric Hoist... Information on how Shaw-Box Load Lifter can cut load-handling costs is available from Manning, Maxwell & Moore, Inc.

Circle 89 on Reader Service Card

Electric Fork Truck... Low cost vertical stacking is described in literature from Mercury Manufacturing Co.

Circle 92 on Reader Service Card

Electric Walkies... There's less idle time with Moto-Truc electric walkies because of simplified operator controls, says The Moto-Truc Co. in bulletin 54.

Circle 98 on Reader Service Card

Wheeled Tractor... The TL-10 TractoLoader is described in literature available from Tractomotive Corporation.

Circle 128 on Reader Service Card

Wheelbarrows... You profit two ways with easy-wheeling Sterling barrows, says literature from Sterling Wheelbarrows.

Circle 122 on Reader Service Card

Steel Strapping... Ideas that will improve your material handling operation are contained in catalog SS9C by The Stanley Works.

Circle 121 on Reader Service Card

and BULLETINS

advertisements in this publication

Conveyors . . . Illustrated general catalog offered by Standard Conveyor Company describes conveyors that will operate up, down or horizontally.

Circle 120 on Reader Service Card

Self-Dumping Hopper . . . Details about self-dumping hoppers are offered by Roura Iron Works, Inc.

Circle 112 on Reader Service Card

Terminal Trucks . . . Full information on how you can save man hours and dollars with Safe-Tow terminal trucks is available from Jakes Foundry Co.

Circle 77 on Reader Service Card

Vibrating Feeder . . . If you're interested in better bulk feeding at lower operating cost, you should read bulletin 5302 says Richardson Scale Co.

Circle 109 on Reader Service Card

Conveyor Chains . . . Catalog 34 prepared by Diamond Chain Co., Inc. contains specifications and engineering data on conveyor chains.

Circle 624 on Reader Service Card

Hydraulic Lift Trucks . . . Bulletin 1149 from West Bend Equipment Corporation gives details on hydraulic pallet lift trucks.

Circle 137 on Reader Service Card

Power Strapping Machines . . . Signode Steel Strapping Co. offers details on power strapping machines.

Circle 116 on Reader Service Card

Pedestal Jib . . . American MonoRail Co. gives details on its pedestal jib that gives 360° hoist hook service.

Circle 8 on Reader Service Card

Vibratory Equipment . . . Vibro-Plus Products, Inc. has available catalogs containing full information on vibratory equipment for every requirement.

Circle 136 on Reader Service Card

Cranes & Shovels . . . Bulletin L-302 from Unit Crane & Shovel Corp. tells about the powerful pick-up ability of Unit equipment.

Circle 134 on Reader Service Card

Attachments and Devices . . . Iron Works Incorporated catalog tells how Empire attachments and devices can cut costs for you.

Circle 73 on Reader Service Card

Storage Skids . . . Skids for storage or production handle small parts more efficiently says Iron-bound Box & Lumber Co. in catalog GP-7.

Circle 72 on Reader Service Card

Gasoline Fork Truck . . . Literature from Hyster Company tells about the new Mono-Mast fork truck.

Circle 71 on Reader Service Card

Pan Type Conveyor . . . Literature from Simplicity Engineering Company tells how balanced pan type conveyors can solve your material handling problem.

Circle 119 on Reader Service Card

Platform Lifts . . . Catalog titled "Modern Lifting" by Globe Hoist Company gives details on fast and safe loading and unloading with platform lifts.

Circle 59 on Reader Service Card

Storage Batteries . . . Gould-National Batteries, Inc. offers information on its Plus-Performance Plan for your battery maintenance staff.

Circle 63 on Reader Service Card

Storage Bins . . . The Neff & Fry Co. says it will pay you to read its folder "Bins With Strength of Pillars", if you have flowable bulk materials to handle and store.

Circle 99 on Reader Service Card

Tote Boxes . . . Cescio Container Co. offers data on its tote-shop boxes that stack securely and conveniently.

Circle 30 on Reader Service Card

Batteries . . . Details on industrial batteries said to be better are available from Bowers Battery & Spark Plug Co.

Circle 22 on Reader Service Card

Industrial Engines . . . Chrysler Corporation has available information on industrial engines which can be adapted to your product.

Circle 31 on Reader Service Card

Worm Drive Hoist . . . Full details on worm drive ElectroLift hoists is obtainable from ElectroLift, Inc.

Circle 45 on Reader Service Card

Use This

READER SERVICE CARD

to obtain information on any item in this issue

Cost Cutting Ideas Starting on Page 72

New Equipment & Supplies Starting on Page 139

Useful Literature Starting on Page 128

PLEASE PRINT

AUGUST, 1955. Do not use after 11-15-55

Name Position

Company Kind of Business

Street

City Zone State

PLEASE SEND ME ADDITIONAL INFORMATION AND LITERATURE ON ITEMS CIRCLED BELOW.

1	18	35	52	49	84	103	120	137	154	171	188	205	222	239	256	273	290	307	324
2	19	36	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325
3	20	37	54	71	88	105	122	139	156	173	190	207	224	241	258	275	292	309	326
4	21	38	55	72	89	106	123	140	157	174	191	208	225	242	259	276	293	310	327
5	22	39	56	73	90	107	124	141	158	175	192	209	226	243	260	277	294	311	328
6	23	40	57	74	91	108	125	142	159	176	193	210	227	244	261	278	295	312	329
7	24	41	58	75	92	109	126	143	160	177	194	211	228	245	262	279	296	313	330
8	25	42	59	76	93	110	127	144	161	178	195	212	229	246	263	280	297	314	331
9	26	43	60	77	94	111	128	145	162	179	196	213	230	247	264	281	298	315	332
10	27	44	61	78	95	112	129	146	163	180	197	214	231	248	265	282	299	316	333
11	28	45	62	79	96	113	130	147	164	181	198	215	232	249	266	283	300	317	334
12	29	46	63	80	97	114	131	148	165	182	199	216	233	250	267	284	301	318	335
13	30	47	64	81	98	115	132	149	166	183	200	217	234	251	268	285	302	319	336
14	31	48	65	82	99	116	133	150	167	184	201	218	235	252	269	286	303	320	337
15	32	49	66	83	100	117	134	151	168	185	202	219	236	253	270	287	304	321	338
16	33	50	67	84	101	118	135	152	169	186	203	220	237	254	271	288	305	322	339
17	34	51	68	85	102	119	136	153	170	187	204	221	238	255	272	289	306	323	340

BUSINESS REPLY CARD

NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

3¢ POSTAGE WILL BE PAID BY: Reader Service Department

FLOW

1240 ONTARIO STREET • CLEVELAND 13, OHIO

FIRST CLASS
PERMIT No. 8046
SEC. 34.9 P. L. & R.
CLEVELAND, OHIO

Use This

READER SERVICE CARD

to obtain information on any item in this issue

Cost Cutting Ideas Starting on Page 72
New Equipment & Supplies Starting on Page 139
Useful Literature Starting on Page 128

BUSINESS REPLY CARD

NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

3¢ POSTAGE WILL BE PAID BY: Reader Service Department

FLOW

1240 ONTARIO STREET • CLEVELAND 13, OHIO

FIRST CLASS
PERMIT No. 8066
SEC. 34.9 P. L. & R.
CLEVELAND, OHIO

PLEASE PRINT

AUGUST, 1955. Do not use after 11-15-55

Name Position

Company Kind of Business

Street

City Zone State

PLEASE SEND ME ADDITIONAL INFORMATION AND LITERATURE ON ITEMS CIRCLED BELOW.

1	18	35	52	69	86	103	120	137	154	171	188	205	222	239	256	273	290	307	324
2	19	36	53	70	87	104	121	138	155	172	189	206	223	240	257	274	291	308	325
3	20	37	54	71	88	105	122	139	156	173	190	207	224	241	258	275	292	309	326
4	21	38	55	72	89	106	123	140	157	174	191	208	225	242	259	276	293	310	327
5	22	39	56	73	90	107	124	141	158	175	192	209	226	243	260	277	294	311	328
6	23	40	57	74	91	108	125	142	159	176	193	210	227	244	261	278	295	312	329
7	24	41	58	75	92	109	126	143	160	177	194	211	228	245	262	279	296	313	330
8	25	42	59	76	93	110	127	144	161	178	195	212	229	246	263	280	297	314	331
9	26	43	60	77	94	111	128	145	162	179	196	213	230	247	264	281	298	315	332
10	27	44	61	78	95	112	129	146	163	180	197	214	231	248	265	282	299	316	333
11	28	45	62	79	96	113	130	147	164	181	198	215	232	249	266	283	300	317	334
12	29	46	63	80	97	114	131	148	165	182	199	216	233	250	267	284	301	318	335
13	30	47	64	81	98	115	132	149	166	183	200	217	234	251	268	285	302	319	336
14	31	48	65	82	99	116	133	150	167	184	201	218	235	252	269	286	303	320	337
15	32	49	66	83	100	117	134	151	168	185	202	219	236	253	270	287	304	321	338
16	33	50	67	84	101	118	135	152	169	186	203	220	237	254	271	288	305	322	339
17	34	51	68	85	102	119	136	153	170	187	204	221	238	255	272	289	306	323	340

CATALOGS AND BULLETINS

Continued

Engine Meters . . . Find out from John W. Hobbs Corporation how the Hobbs engine hour meter lets you know when protective maintenance is needed. Free literature gives details.

Circle 69 on Reader Service Card

Shipping Containers . . . Publication titled "Heavy Duty" by General Box Company contains information on various types of shipping containers.

Circle 55 on Reader Service Card

Case Marker . . . Descriptive literature from Adolph Gottscho, Inc. tells about a low-cost case marker that pays for itself in weeks.

Circle 62 on Reader Service Card

Bag Closer . . . Details on a portable bag closer said to offer fast, secure and low cost operation are available from Dave Fischbein Co.

Circle 53 on Reader Service Card

Power & Gravity Conveyors . . . A. B. Farquhar Division of The Oliver Corporation says it will pay you to get facts on the integration of power-belt and gravity conveyors. They're free for the asking.

Circle 51 on Reader Service Card

Layout Service . . . Fully illustrated, fact-crammed booklet by Equipto Division of Aurora Equipment Co. tells how to lay-out your own storage facilities.

Circle 48 on Reader Service Card

Conveyor Belt . . . Folder from Buffalo Weaving & Belting Co. tells how to buy the right conveyor belt for your particular job. Also contains illustrated uses, maintenance tips, sizes and prices.

Circle 27 on Reader Service Card

Portable Stacker . . . Allied Mfg. & Sales Co. offers a catalog containing complete details on the Lift King portable stacker with a 60 inch lift.

Circle 4 on Reader Service Card

Bulk Loader . . . Catalog L-12 4 published by The Jaeger Machine Co. tells about the Auto-Scoop for fast bulk handling.

Circle 76 on Reader Service Card

Hand Equipment . . . General catalog from Bond Foundry & Machine Co. gives information on the manufacturer's line of equipment, including casters, two-wheel hand trucks and platform trucks.

Circle 21 on Reader Service Card

Car Loader . . . Booklet from Evans Products Company gives complete facts about DF equipment and its adaptability to any type of lading.

Circle 50 on Reader Service Card

Trucks and Attachments . . . Full details on a complete line of trucks and attachments is available from Clark Equipment Company.

Circle 32 on Reader Service Card

Containers . . . For the smooth, profitable flow of materials, G. B. Lewis Company suggests you use Lewis industrial containers. Literature highlights various models, including the stacking box, folding box, skid box and box truck.

Circle 82 on Reader Service Card

Elevating Tailgates . . . Details on how Heil loader elevating tailgates can cut pick-up and delivery costs by 50 percent are offered by The Heil Co.

Circle 66 on Reader Service Card

Trough Belt Conveyor . . . Fast undercar unloading is possible with its trough belt conveyor, says catalog published by New London Engineering Co.

Circle 100 on Reader Service Card

Metal Conveyor Belts . . . Thirty-two page catalog available from Cyclone Fence Department of American Steel & Wire Division contains informative text and pictures on Cyclone's complete line of metal conveyor belts.

Circle 11 on Reader Service Card

Bins . . . Constant material flow from bins and hoppers is assured with PneuBin pulsating panels, says literature from Gero-tor May Corporation.

Circle 57 on Reader Service Card

Racks . . . Before you decide on a new warehouse, additional storage space or the purchase of stacking equipment, Equipment Mfg. Inc. says it will pay you to read its new catalog.

Circle 47 on Reader Service Card

Cranes . . . Suggestions on how to save money on cranes is offered by Wright Hoist Division of American Chain & Cable.

Circle 5 on Reader Service Card

Slings . . . Catalog published by The Cambridge Wire Cloth Co. contains information on woven wire slings, said to grip better, last longer and reduce load damage.

Circle 29 on Reader Service Card

Casters and Wheels . . . Free manual on casters and wheels offered by Darnell Corporation, Ltd. contains informative selection data.

Circle 36 on Reader Service Card

Cranes . . . Conco Engineering Works has available data on cranes and hoists designed to save you money.

Circle 34 on Reader Service Card

Hoists . . . When close, careful handling is required, Detroit Hoist and Machine Co. suggests the two speed hoist. Brochure gives details.

Circle 37 on Reader Service Card

Cable Conveyors . . . Using Buschman standard stocked parts, your own crew can set up a Universal cable conveyor tailored to your specific requirements, says literature from The E. W. Buschman Company.

Circle 28 on Reader Service Card

Boxes and Baskets . . . Catalog from The Chas. Wm. Doepke Mfg. Co., Inc. gives the inside story on new economy and efficiency in small parts handling with NesTier equipment.

Circle 40 on Reader Service Card

Tape Machine . . . Derby Sealers, Inc. offers a booklet on two-strip center-seam sealing, in line with amended Rule 41.

Circle 144 on Reader Service Card

Batteries . . . Form 1982 from The Electric Storage Battery Company, Exide Industrial Division, contains installation and maintenance information on motive power batteries.

Circle 44 on Reader Service Card

Powerized Walkies . . . Revolver Company has established data on electric powered walkies, designed to save money.

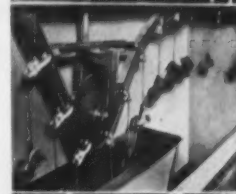
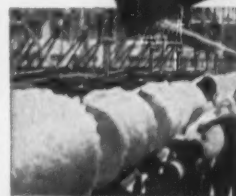
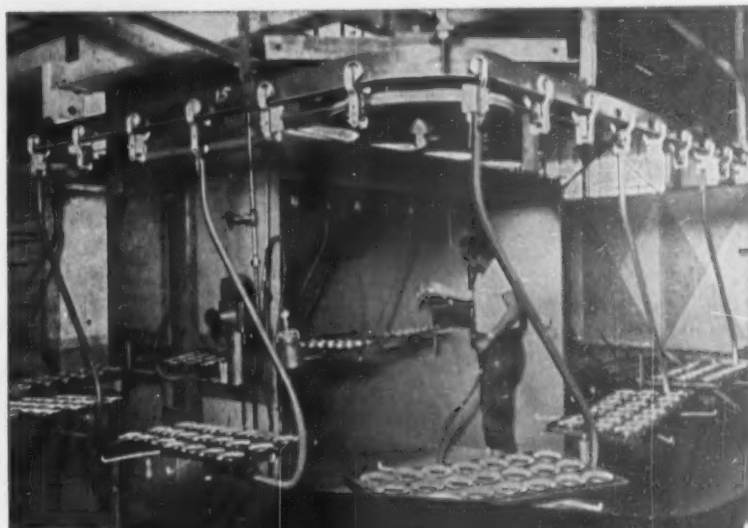
Circle 108 on Reader Service Card

Conveyor . . . Full details on automated conveyors is offered by Service Conveyor Company.

Circle 114 on Reader Service Card

Tapes . . . Booklet titled "Heavy Packaging and Materials Handling" is available from Minnesota Mining and Mfg. Co.

Circle 96 on Reader Service Card



LOWER INITIAL COST — Buschman "Universal" Cable Conveyors not only cost less but also outperform heavier, more expensive conveyors for light and medium-weight applications.

LOWEST MAINTENANCE COST — Constant take-up readjustment is eliminated because of a safety factor of 14-to-1 or greater.

LOWEST REARRANGEMENT COST — Exclusive Buschman design plus lightweight all-bolted construction make future changes fast and easy.

MORE COMPACT DESIGN — Shorter radius curves and dips permit more complete utilization of production and storage space . . . both overhead and at work level . . . require less room inside industrial avents, washers, dip tanks, etc.

SMOOTHER OPERATION — There are no pulsations or jerks to damage delicate parts or finishes when your product is handled on Buschman Cable Conveyors.

PRE-ENGINEERED — Using Buschman standard stocked parts, your own crew can set up a "Universal" Cable Conveyor tailored to your specific requirements.



Write today for catalog.



THE E. W. BUSCHMAN COMPANY

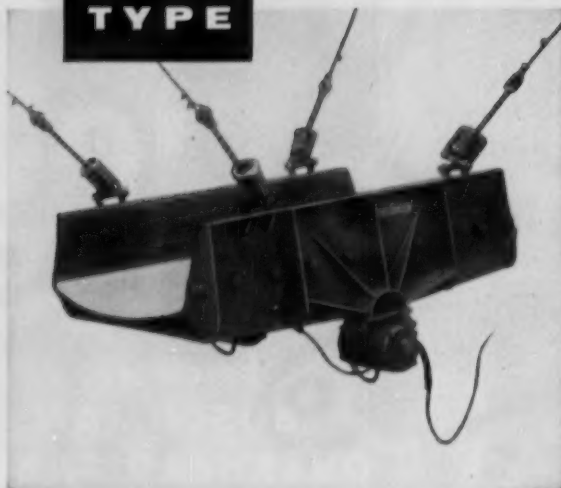
4450 Clifton Avenue • Cincinnati 32, Ohio

Representatives in Principal Cities

Complete Conveyor Systems For All Types of Industries • Engineered • Manufactured • Installed

Circle No. 28 on Reader Service Card for more information

**ERR
TYPE**



VIBRATING FEEDERS BY VIBRO-PLUS

Vibro-Plus ERR Feeders are ideal for feeding sand, gravel and crushed stone onto belt conveyors . . . leading trucks from storage bins . . . evening flow between crushers of all sizes.

The ERR provides heavy sheet metal walls strongly reinforced at critical stress points. One or two ER Topdog vibrator units are strongly and strategically mounted beneath feeder transmitting maximum vibration to the entire underside. The ER vibrator removes easily for inspection.

Vibro-Plus ERR Feeders are supplied for all capacities. Standard type ERR 85-2 specifications are: Length—56.5". Inside width—31.5". Inside depths—12". Replaceable bottom wear plate. Two ER 300 Vibrators, bracket mounted. Weight 500 lbs. Cap.—150 tons crushed rock per hour.

The ERR 25-1 specifications are: Length—43.5". Width—23.5". Depth—10". One ER 160 Vibrator, bracket mounted. Weight—approx. 175 lbs.

Vibro-Plus catalogs give full information on vibratory equipment for every requirement.

VIBRO-PLUS PRODUCTS, Inc.

54-11 QUEENS BLVD. • WOODSIDE, L. I., N. Y.
Circle No. 136 on Reader Service Card for more information

CATALOGS

Continued

Magnetic Conveyors . . . The Homer Manufacturing Co., Inc. suggests you send for bulletin MC-101 containing space saving ideas with magnetic conveyors.

Circle 68 on Reader Service Card

Tray Elevator . . . Gifford-Wood Co. is offering free a fully-diagrammed Idea Book on engineered material handling.

Circle 149 on Reader Service Card

Trucks and Trailers . . . Heavy duty trucks and trailers built to your specifications are detailed in literature published by The Ohio Galvanizing & Mfg. Co.

Circle 148 on Reader Service Card

Tractor Shovel . . . Data from The Baker-Rauling Company describes many features of the Shovel loader, said to cost less than comparable models.

Circle 17 on Reader Service Card

Crane . . . Catalog published by Ruger Equipment Co. shows the company's complete line of floor cranes and lists specifications.

Circle 113 on Reader Service Card

Engines . . . Wisconsin Motor Corporation has literature available on air-cooled engines.

Circle 139 on Reader Service Card

Mobile Radio . . . Free booklet on mobile radio is offered by General Electric Company.

Circle 56 on Reader Service Card

Dock Covers . . . Literature describing dock covers that give year 'round protection is available from Capco.

Circle 142 on Reader Service Card

Drum Attachment . . . Drum handling can be simple and automatic, says Marvel Industries, Inc. in available literature.

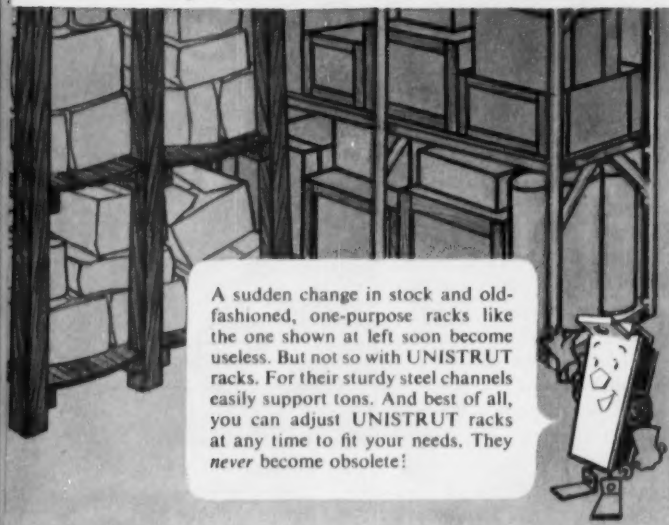
Circle 146 on Reader Service Card

"The Sky's The Limit"

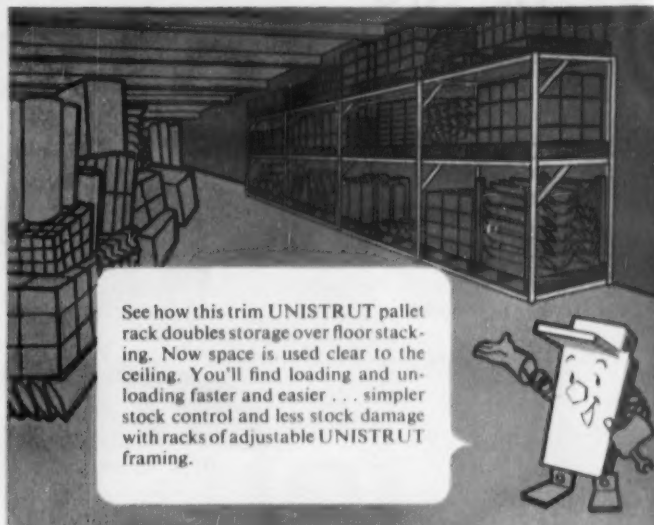
—when you build with UNISTRUT®



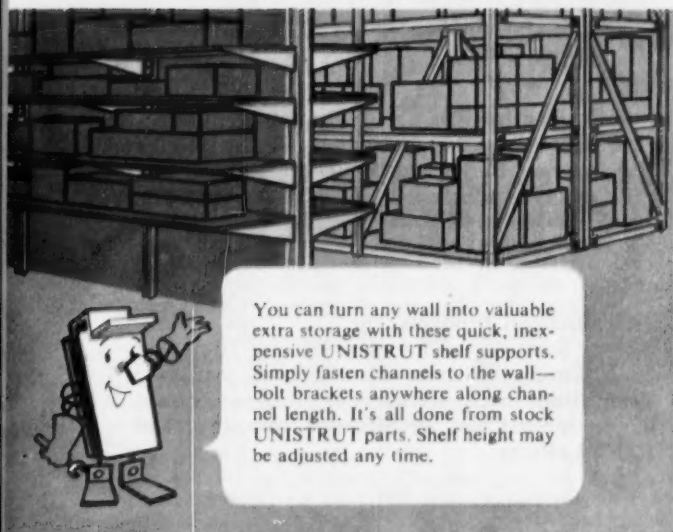
Mr. Strut shows four ways to get more storage from present space with UNISTRUT® framing



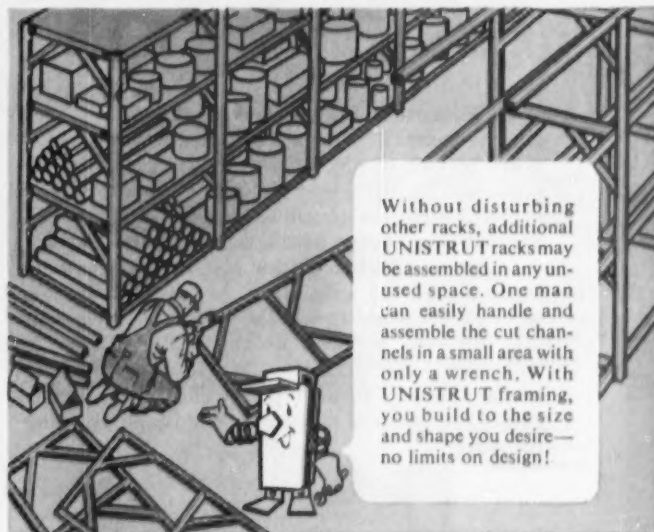
A sudden change in stock and old-fashioned, one-purpose racks like the one shown at left soon become useless. But not so with UNISTRUT racks. For their sturdy steel channels easily support tons. And best of all, you can adjust UNISTRUT racks at any time to fit your needs. They never become obsolete!



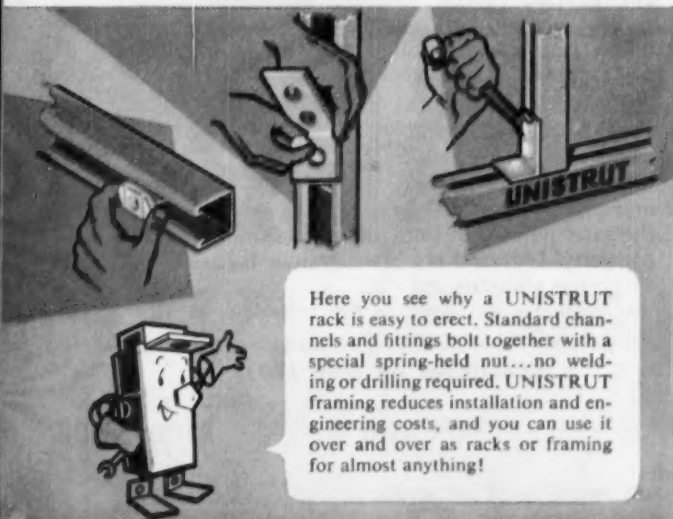
See how this trim UNISTRUT pallet rack doubles storage over floor stacking. Now space is used clear to the ceiling. You'll find loading and unloading faster and easier... simpler stock control and less stock damage with racks of adjustable UNISTRUT framing.



You can turn any wall into valuable extra storage with these quick, inexpensive UNISTRUT shelf supports. Simply fasten channels to the wall—bolt brackets anywhere along channel length. It's all done from stock UNISTRUT parts. Shelf height may be adjusted any time.



Without disturbing other racks, additional UNISTRUT racks may be assembled in any unused space. One man can easily handle and assemble the cut channels in a small area with only a wrench. With UNISTRUT framing, you build to the size and shape you desire—no limits on design!



Here you see why a UNISTRUT rack is easy to erect. Standard channels and fittings bolt together with a special spring-held nut...no welding or drilling required. UNISTRUT framing reduces installation and engineering costs, and you can use it over and over as racks or framing for almost anything!

Free Catalog!

Send today for your free copy of the 24-page catalog No. 600. Countless examples of how to build racks for every purpose.

U. S. Patent Numbers
2327587 2541908 2329815 2345650
2363382 2696139 2380379 2405631
Other patents pending



UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd.
Chicago 7, Illinois

Dept. A-8

Please send without obligation items listed below:

☐ Catalog No. 600 ☐ UNISTRUT sample

Name.....
Company.....
Address.....
City..... Zone..... State.....

MEN in the NEWS

At Pettibone Mulliken Corp. . . . Herbert J. Knudten, president of Universal Engineering Company, has been elected vice president of the parent company. A graduate of the University of Chicago, Knudten joined Universal in 1946 as treasurer, and was appointed president later that year. He will continue in his present capacity at Universal and maintain residence at Cedar Rapids.



H. J. Knudten

At Minnesota Mining & Mfg. Co. . . . Three vice presidents with a combined record of 90 years service to 3M, figured in a recent realignment said by President Herbert P. Buetow to be made to facilitate continued growth. Clarence B. Sampair has charge of the tape and ribbon products group which includes Mid-States Gummed Paper Co., a 3M subsidiary. Joseph C. Duke assumes responsibility for the adhesives and coatings division, as well as the coated abrasives and related products division. Hubert J. Tierney heads a newly formed plastic division and becomes chairman of a newly-created tape planning committee.



Chrysler Corporation recently presented a \$5000 check to the Wayne University Materials Management Center. E. A. Skae, chairman of the Center's finance committee (center) is shown accepting the check from Herbert O. Horning, of Chrysler Corporation's material handling staff. Looking on is Dr. Spencer A. Larsen, director of the center.

At The Raymond Corp. . . . Son succeeded father, as George G. Raymond, Jr., was elected president of the company headed by the elder Raymond since 1922. George G. Raymond, Senior was elected chairman of the board, and will continue active in the business. George G. Raymond, Jr. has been executive vice president and sales manager of the company for the past several years. He is first vice president of the Material Handling Institute.



G. G. Raymond, Jr.

At Rotary Lift Co. . . . Three employees have been promoted to vice presidents. They are: Jack Burch, Bryan Earles and Don Humphreys. Burch will head the Industrial Division, Earles the Elevator Division, and Humphreys will continue as works manager.

At Sherman Products, Inc. . . . Three new directors were elected by shareholders. They are: H. A. Strong, Sherman manufacturing manager; W. M. Bollenbach, president of Johnson Hydraulic Equipment Co., an affiliated company; and R. M. LaPorte.

At The Electric Storage Battery Co. . . . Warren Ingersoll has been named to the newly created post of assistant to president C. F. Norberg. He will work in the field of customer relations, implementing at staff level the sales policies of the company. Ingersoll is a Princeton alumnus and was formerly assistant to the president of Lee Rubber & Tire Corporation.



Warren Ingersoll

(Continued on page 120)

heavy-duty beauty

with smooth-as-silk performance



PHOTO COURTESY SILENT HOIST & CRANE CO., INC., BROOKLYN, NEW YORK

Chrysler Horsepower and gýrol Fluid Coupling team up nicely in 15-ton fork lift truck

This fork lift truck is no "prima donna," but it is a heavy-duty beauty . . . with a load capacity of 30,000 pounds. It's a Silent Hoist Litruck, Fork Truck Model FK 15, here pictured bringing logs to a New Hampshire sawmill. Neither mud nor rough, rocky terrain will hang up this unit in the performance of its job. From his seat, the operator easily controls lift, tilt and travel components.

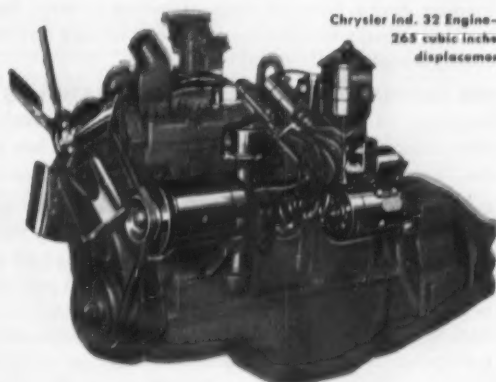
Front wheels do the driving, are mounted on "dead" axle which carries full weight of truck and fork load. Rear wheels steer the vehicle. Litruck pictured is equipped with extra-tough deep-groove tires and the driver is protected with optional overhead safety guard.

Power for Litruck Model FK 15 is supplied by the action-packed, *action-proved* Chrysler Ind. 32 Engine. This lightweight, compact 265 cubic inch displacement engine drives the hydraulic system which operates load mechanism and the travel components which move the entire vehicle at speeds up to 12 miles per hour. Chrysler gýrol Fluid Coupling connects engine and four-forward-speed transmission, simplifies driver operation, eliminates shock overload and assures longer life for engine, transmission and equipment.

Users of heavy-duty, self-propelled equipment . . . in lumber as well as in every other industry relying upon fast movement of materials . . . prefer equipment powered by Chrysler. That is why manufacturers, like Silent Hoist & Crane Company, offer Chrysler-powered equip-

ment. They can order their engines factory-equipped with any of a large number of special items, including the New Chrysler Industrial Torque Converter with built-into-the-housing speed control device.

Chrysler Industrial Engines are not expensive. Production-line methods adapted to specialized industrial engine building provide custom-built engines at mass-production prices. See a Chrysler Industrial Engine Dealer, or write: **Dept. 215, Industrial Engine Division, Chrysler Corporation, Trenton, Michigan.**



Chrysler Ind. 32 Engine—
265 cubic inches
displacement

CHRYSLER *Industrial Engines*

INDUSTRIAL ENGINE DIVISION • CHRYSLER CORPORATION

HORSEPOWER



WITH A PEDIGREE



AGRICULTURE • INDUSTRY • CONSTRUCTION • OIL FIELDS

Circle No. 31 on Reader Service Card for more information



BALL BROTHERS COMPANY, INC., Muncie, Ind., glass container manufacturer, achieves 80% "in-use" time for its vehicles (1'way above estimated national

average of approximately 55%). The roving foreman uses G-E 2-way radio to coordinate activities of all trucks operating between 17 warehouses.

New high reported in material handling truck utilization

INSTALLATION of General Electric 2-way radio units on Ball Brothers' vehicles, which transfer products from warehouses to rail and truck loading docks, boosted their utilization to 80%. Because there's immediate communication between vehicles and a roving foreman, rush consignments really *move*!

THE SHIPPING, WAREHOUSING AND MATERIALS handling superintendent can contact his roving foreman *instantly, at any time*. He also can use the radio system to contact other key personnel around the 70-acre plant area, from the transmitter in his office.

G-E INDUSTRIAL 2-WAY RADIO may be operated from any of the five DC voltage systems used by materials handling vehicles. Converters are used by G.E. for installations on 24, 32 and 64 volt trucks. These converters have been specifically designed to provide optimum radio performance at all voltages between peak and minimum operating battery charge conditions. The General Electric unit is also available for operation from 117-volt AC power.



● Investigate the outstanding versatility, sturdy construction and low maintenance of G-E industrial mobile radio. Write for **FREE** booklet ECR-106A, General Electric Co., Section X3285, Communication Equipment, Electronics Park, Syracuse, N. Y.

Progress Is Our Most Important Product

GENERAL  ELECTRIC

Circle No. 56 on Reader Service Card for more information

LITTLE JOB?

BIG JOB?

delicate job?



...cela ne fait rien

There's a



**CASTER
RIGHT**

for your needs



BIG JOB?

**COLSON
Forgeweld Casters**
The world's finest
caster for extra
heavy duty require-
ments. Wheels of
cast steel, iron, rub-
ber, molded plastic
—in capacities up to
6000 pounds per
caster.

That's right! Whether you work in Paris or Peoria, whether you make pies or pig iron, there's an easy-rolling COLSON Caster that meets your needs—*exactly*. For the price of new, roll-easy COLSON Casters you can convert old, bumpy hard-to-push hand trucks to an efficient, smooth-sailing fleet—at very small cost.

Why not write today for free booklet on COLSON materials-handling equipment, or better still, look in the yellow pages (under "Casters") for the Colson office near you?

LITTLE JOB?

COLSON PressWeld Casters

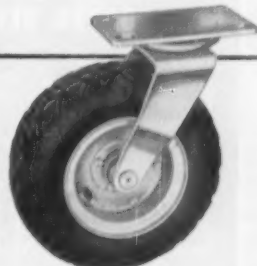
An improved low-cost caster with hardened raceways and unbreakable fork and top plate. Ideal for dollies, racks, box trucks and similar applications in the moderate capacity range.



delicate job?

COLSON Pneumatic Casters

COLSON Pneumatic and Semi-Pneumatic casters are ideal for handling fragile products over rough, bumpy floors. Available in rigid or swivel models with 6", 8" or 10" tires.



THE COLSON CORPORATION

ELYRIA, OHIO

CASTERS • HAND TRUCKS • LIFT JACK SYSTEMS

Hydraulic, Electric and Mechanical Power Lifts and Transports

Circle No. 33 on Reader Service Card for more information

"YOU SEE BUFFALO CONVEYOR BELTS

Everywhere"



IN THE

FOOD INDUSTRY experts insist on our PLASTEX BELT

Know why you're seeing more and more Buffalo *solid-woven-cotton* Conveyor Belts? It's because they've **PROVEN** themselves to be actually **TOUGHER, LONGER LASTING** and **LOWER** priced than **ANY** other type of conveyor belt on the market. The "built-in-bounce" of cotton resists the impacts of daily production **FAR BETTER** than other materials you may have **ASSUMED** is stronger. The very **PLIABILITY** of a woven belt permits it to smooth out your conveyor . . . it won't fight obstacles, it merely *molds* itself around them. These lower cost belts are available untreated or with a wide variety of surface coatings that make them resistant to specific destructible elements. In your business, the belt at the left is quite a favorite.

WRITE FOR FREE FOLDER

Tells how to Buy the Right Conveyor Belt for your Particular Job. Illustrated Uses, Maintenance Tips, Sizes, Prices.



OVER
200 SIZES
35 WIDTHS
7 THICKNESSES

PLASTEX COATED BELT

Buffalo's regular cotton belt is covered with a tough plastic overcoat to produce **PLASTEX**. This surface won't crack or peel and is impervious to hot grease, oils, acids, alkalies, moisture and temperatures from -20° to 200° F. Won't absorb or exude any odors and can be cleaned by **ANY** method including live steam.

BUFFALO WEAVING & BELTING COMPANY

209 CHANDLER STREET

BUFFALO 7, NEW YORK

NEW YORK PHILADELPHIA CHICAGO DETROIT LOS ANGELES

Circle No. 27 on Reader Service Card for more information

news from the
SALES FIELD

Central region sales manager for the Industrial Truck Division of **Clark Equipment Company** is **John J. Mlynski**. He is headquartering in Chicago. Mlynski was associated with **Ross Carrier Company** for seven years then became a distributor salesman and then district sales manager on the Clark factory staff. Prior to that time he represented **Lewis-Shepard Products, Inc.**



On July 1, **H. W. Overman** became director of sales for **Brooks Equipment Company**, division of **Borg Warner Corporation**. He is headquartering in temporary offices in **Knoxville, Tennessee**, until January 1, at which time he will transfer to **Kalamazoo, Michigan**. Overman previously was manager of **The American Pulley Company's Materials-Handling Division**.

IMC Equipment, Inc. is the new **Automatic Transportation Company** franchise representative in the state of **Georgia**. Occupying 4500 square feet of space at 1327 Spring Street, N.W., Atlanta, the firm is headed by **R. L. Warwick**. Assisting Warwick are **R. B. Fogarty, J. T. Fulwiler Jr., and William Chapman**.

Exclusive distributor for **Martin-Decker Corporation** is **E. D. Flournoy Company**, 1224 East Missouri Street, El Paso,

Three completely New **PAYLOADER®** tractor-shovels with new "more-yardage" features

POWERFUL PRY-OUT ACTION

Tremendous pry-out force is obtained by using the breakout pads on the ground as a fulcrum for leverage. The load forces opposing the pry-out action are thus transferred to the ground through the pads instead of to the axle, wheels and hydraulic system of the machine.



HU

1 cu. yd.

40° BREAK-OUT at ground level

You can get HEAPED BUCKET LOADS and you get them FASTER and EASIER WITH THIS NEW BUCKET ACTION. Most important of all — you KEEP BIGGER PAYLOADS—because the bucket can be tipped back a full 40 degrees at ground level before it is raised, eliminating spillage.



HH

1 1/2 cu. yd.

SAFETY and STABILITY

Special boom-arm shape and positioning keeps moving members out of operator's reach at all positions. Close, low, load-carry position and longer wheelbase provide stability and balance for fast maneuvering — with safety.



HO

2 cu. yd.

These three all-wheel-drive "PAYLOADER" units are outstanding examples of Hough's continuing pioneering and leadership in tractor-shovel design. They have more digging power, get big bucket loads easier, can carry them faster and safer.

They are full of other features and improvements that boost output, operator comfort and safety and that lower the cost of digging, scooping-up, loading, moving and piling earth and bulk-materials.

Your "PAYLOADER" Distributor is ready to demonstrate these new units and what they can do — for you.

HOUGH-DESIGN HOUGH-QUALITY

More Horsepower per bucket capacity than any other standard models. Either diesel or gasoline engines available.

Easy to Operate Fullst operator visibility for safe, fast maneuvering; power steering; powerful hydraulic brakes; adjustable seat with molded foam-rubber cushions.

Powerful Transmissions Power-shift transmission is standard equipment on the big model HO; four-speed full-reversing types on model HH and HU. Torque converter drives are standard equipment on all models — multiply engine torque up to 350% — act as shock absorbers for the entire power train.

THE FRANK G. HOUGH CO.

Send full information on new "PAYLOADER" Tractor-Shovels

- ☐ Model HU 1 cu. yd.
- ☐ Model HH 1 1/2 cu. yd.
- ☐ Model HO 2 cu. yd.

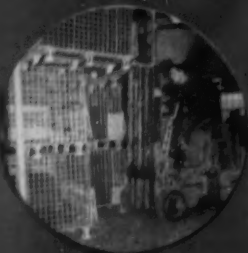
Name
Title
Company
Street
City
State



PAYLOADER®
MANUFACTURED BY
THE FRANK G. HOUGH CO. LIBERTYVILLE, ILL.
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY



Circle No. 70 on Reader Service Card for more information



Palletainers stack easily and safely to any practical height. They're tip-proof and sag-proof even under the heaviest loads.



Palletainers fold flat to save 75% of their open size for storage or more economical return-shipping rates. They are fast and easy to set up or fold down.

Make your floor space do double, triple—even quadruple duty by warehousing your working storage or inventory in USP Palletainers. Only Palletainers offer you so many recognized advantages for the transport, safe stacking, storing of your materials.

Palletainers handle *anything* better! They increase your production efficiencies, improve your plant's appearance and quickly pay for themselves in man hours and space saved.

Palletainers are practically indestructible—built to endure rough, fast handling for years to come. Palletainer users tell us they estimate their units *minimum* life span at 8 to 10 years. They are available in a wide range of sizes, types, styles and loading capacities from 500, 1250, 2000, 4000 and 6000 pounds per unit.

Why not see for yourself how many places USP Palletainers could save you time, money and effort in *your* plant. USP will supply standard Palletainers for 60 day testing upon request.

PALLETAINERS

manufactured by **UNION STEEL PRODUCTS CO.**
ALBION, MICHIGAN



Gentlemen: Please send me my copy of the big, new illustrated USP Palletainer booklet at once.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

☐ Please have your Palletainer representative contact me.

Circle No. 145 on Reader Service Card for more information

SALES FIELD

Continued

Texas. The firm operates branch offices in Lubbock, Texas; Phoenix, Arizona; and Albuquerque, New Mexico.



C. E. Thyng (center), New England sales manager of The Fairbanks Company, is presented with a replica of the Joseph Conyer bowl (circa. 1700) to celebrate his 50th anniversary of service to Fairbanks. Left to right are: A. C. Verner, treasurer; Alexander Naylor, president; Thyng; E. T. Flanagan, vice president; and James Hanson, vice president engineering.

Automatic Transportation Company has appointed John Gilliam Equipment Company as its franchise representative for the entire state of Texas. The firm, with sales and service facilities in Dallas, Houston and Fort Worth, formerly represented Automatic in northern Texas only.

R. J. Fyfe Equipment Limited, Regina, Saskatchewan, has been appointed Bucyrus-Erie Company distributor for the entire Province of Saskatchewan. The company operates a branch office at Saskatoon, Saskatchewan.

Six distributors and six manufacturers' agents have been named by Structo Systems, Inc., according to General Manager Edward L. Lee. New distributors are: Wrenn Brothers, Charlotte, N.C.; Wurzburg Brothers, Inc., Memphis, Tenn.; Chalmers Wood, Kansas City, Mo.; Safway Steel Scaffold Co., Sioux City, Iowa; Safway Scaffolds Co. of Texas, Inc., Dallas, Texas; and Alton,



A Globe Platform Lift in this one-story building provides easy handling of heavy fork lift trucks.



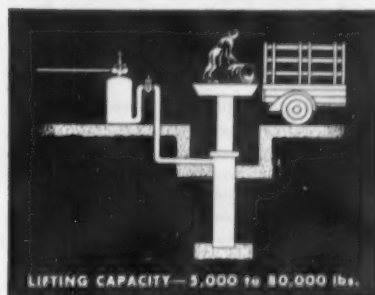
Operated by positioning a valve, platform rests flush with floor in down position permitting cross traffic and storage when not in use.

BRING GROUND LEVEL TO TRUCK LEVEL FOR **FAST AND SAFE** LOADING AND UNLOADING

Hydraulic power smoothly, quickly raises a steel platform from flush-ground level to truck-bed height. The need for ramps, gangplanks, manual lifting is eliminated. Work is speeded . . . and safe.

Loads move *on the level* . . . from one level to another. Thus breakage and accidents due to the unsteadiness of moving loads up and down inclines is eliminated.

Globe Platform Lifts quickly pay for themselves. Standard, low-cost designs meet most needs and are available for quick delivery. Variations to meet unusual handling requirements are readily supplied.



GLOBE
PLATFORM LIFTS
PLANTS: DES MOINES—PHILADELPHIA



Circle No. 59 on Reader Service Card for more information

Globe Hoist Company
East Mermaid Lane at Queen Street
Philadelphia 18, Pa.

F-703-L

Please send me a copy of "MODERN LIFTING"
(Form 663).

Name.....
Company.....
Address.....
City and Zone..... State.....

SALES FIELD

Continued

Inc., McKeesport, Pa. Manufacturers agents appointed are: **Bola Steel Sales**, Kalamazoo, Mich.; **McKenna Sales Co.**, Dearborn, Mich.; **Wm. T. Brass**, Fort Wayne, Ind.; **John P. Mulford**, Dayton, Ohio; **McKown Sales Co.**, Huntington, W. Va.; and **Gilbert-Tucker Associates**, New York, N.Y.

Lewis-Shepard Products, Inc. has appointed **Don D. Sheriff** exclusive sales and service representative in the state of Oklahoma. He was formerly purchasing agent for Jones and Laughlin Supply and M. W. Kellogg, both of Tulsa.

New Chicago district office address of **May-Fran Engineering, Inc.** is 185 North Wabash Avenue.

Recently appointed representative of **Union Steel Products Company** is **DeHuff & Hopkins**, 910 Conestoga Road, Rosemont, Pennsylvania. The firm will cover eastern Pennsylvania, Delaware and southern New Jersey.

Four new distributors have been named by **Wayne Shovel and Crane Division** of **American Steel Dredge Co., Inc.** They are: **Contractors Equipment Corp.**, Portland, Oregon; **Larson Equipment Co.**, Los Angeles, California; **Pit & Quarry Equipment Co.**, Indianapolis, Indiana; and **Richland Machinery Co.**, Sidney, Montana.

William Spittle and **Bob Cody** have been named district sales managers by **Borroughs Manufacturing Company**. Spittle was previously associated with **Ford Motor Company**, and Cody most recently was **Borroughs'** eastern sales supervisor.

Clark Equipment Company has assigned **Ralph Cole** to handle field service work in connection with the **Ross straddle carrier**. He will headquarter in **Benton Harbor, Michigan**. Cole joined **Ross Carrier Company** in 1928. Six new dealers will sell and service the Michigan line products of the **Construction Machinery Division**. They are: **Stephens Equipment Co.**, Des Moines, Iowa; **R. E. Common Equipment Co.**, Peoria, Illinois; **Machinery Outlet, Inc.**, Wichita, Kansas; **Totem Equipment Co.**, Seattle, Washington; **West Virginia Tractor and Equipment Co.**, Charlestown, West Virginia; and **Barker Equipment Co.**, Fredericton, New Brunswick, Canada.

Pat E. Dougherty has been appointed district sales representative for **Leschen Wire Rope Division**, H. K. Porter



American Appliance Trucks are only a part of the full line of hand trucks—50 sizes and models—for every type of moving job.

American Steelite® Wheels

Light weight, pressed-steel centers. Special design ball bearings make wheels interchangeable—fit any axle or hub. Heavy-duty rubber treads "rolled on so they can't roll off."



American Barrel Cradles

All-steel construction. Patented, disappearing loading bar. Shipped semi-knocked-down in cartons to save warehouse space, keep cradles in top condition.



American Hand Trucks

Light weight all-steel. Smooth joints and surfaces protect loads. Finger-tip balance moves more with less effort. Steelite wheels give years of extra wear. Sold with a 5-year guarantee.



Name the moving job... there's an **AMERICAN** Hand Truck "tailor-made" for it

No matter what you handle, you'll find the exact hand truck you need in one of American's 50 different models and sizes.

The American Appliance Line, for instance, features both steel and magnesium trucks for dealer, warehouse and home delivery use with all kinds of appliances.

American Magnesium trucks are feather-light, strong as steel. Endless-belt stair climbers and Steelite ball bearing wheels make moving easy. Special rubber padding protects appliances from dents, scratches, other damage. Heavy web straps and patented, self-tightening leverage buckles hold loads firmly in place. Many types available—standard, adjustable and special models for moving home freezers and other big items.

An all-purpose, all-steel series with many of the above features offers unbeatable hand truck economy.

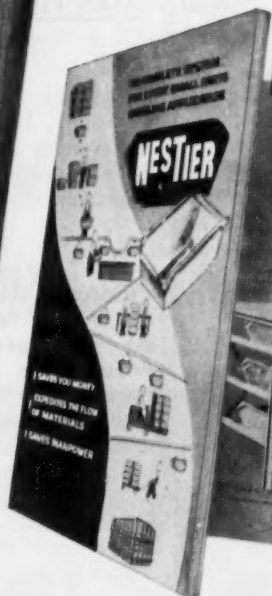
See your local distributor or write today for a free catalog on the American Hand Truck Line. The American Pulley Company, 4290 Wissahickon Avenue, Philadelphia 29, Pa.



Stocked and sold nationally by over 350 distributors



Circle No. 9 on Reader Service Card for more information



Here is the **Inside Story...**
on new economy and
efficiency in small parts
handling with...



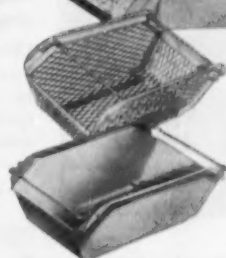
NEW CATALOG DESCRIBES INTEGRATED PRODUCT LINE AND SYSTEMS



Just off the press, this new Nestier catalog contains the entire complete story of Nestier equipment... the equipment pre-engineered to permit standardization on one type of materials handling container throughout your plant.

Fully illustrated, CATALOG DN-1000 gives a comprehensive explanation of the profitable savings and increased efficiency possible when small and medium size parts are handled the Nestier way. All Nestier equipment is described and illustrated, including newly developed units that quickly convert standard Nestier boxes and baskets into an integrated materials handling system. Specifications for all products are presented in chart form for easy reference.

The key to lower handling costs is yours without obligation... just fill in and return the coupon today for your free copy of CATALOG DN-1000.



C-238-DN

NESTIER

... First in small parts handling

The Chas. Wm. Doepke Mfg. Co., Inc.

The Chas. Wm. Doepke Mfg. Co., Inc.
1936 BLUE ASH ROAD • ROSSMOYNE, OHIO

Please send me a copy of

Name

MEMO

FROM ADVERTISING DEPARTMENT

TO: C.W. Doepke

We're repeating this ad.
Response has been
TERRIFIC! Printer says
more catalogs are due
tomorrow. Bill

NESTIER

The Chas. Wm. Doepke Mfg. Co., Inc.

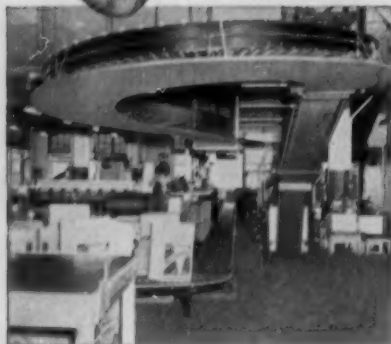
8836 BLUE ASH ROAD • ROSSMOYNE, OHIO

Circle No. 40 on Reader Service Card for more information



Want to move things

up →



For lifting or lowering — floor-to-floor — the INCLINEBELT

Continuous package conveying — a complete belt conveyor system or the Inclinebelt—complete, compact easy-to-install, electric-motor powered unit. High, continuous-line load capacity for any floor elevation. Available in belt widths of 8-12-14-18-24-30 and 36 inches.

down →



For inclined or horizontal conveying — the UTILITY BELT-VEYOR

Conveys from floor-to-floor. Moves "packages" down, up or horizontally. Electric motor powered. Installs over existing stairways, or can be used as a portable Levelbelt conveyor. Four standard belt widths: 10-14-20 and 24 inch.

or

horizontally? →



For straight line or inclined conveying — assemble your own system or portable conveyor using HANDI-DRIVE pre-built units

These stock, pre-built conveyor units make it easy to assemble what you want in a conveyor. Converts existing gravity conveyor to power conveyor — quickly and at low cost. Can be installed as single portable unit or complete system.

Standard builds conveyors to speed any ONE or all THREE

Call your Standard representative listed in your classical phone book or send for Illustrated Standard General Catalog describing all three units—address Dept. FL 95

STANDARD CONVEYOR COMPANY

General Offices: North St. Paul 9, Minnesota • Sales and Service in Principal Cities



GRAVITY & POWER Conveyors

ROLLER • SLAT • WHEEL
SECTIONAL • BELT • CHAIN • PUSH-BAR

PORTABLE CONVEYOR UNITS:

HANDIBELT • INCLINEBELT • EXTENDOVEYOR • UTILITY BELT-VEYOR
HANDIPILER • LEVEL BELT • LITWATE • HANDIDRIVE
PNEUMATIC TUBE SYSTEMS



Circle No. 120 on Reader Service Card for more information

SALES FIELD

Continued

Company, Inc. He will cover the state of Washington, western Idaho and northwestern Montana.

Edward A. Holland, who first served The Electric Storage Battery Company as a clerk in 1937, recently became assistant manager of the New York sales branch. He was promoted to



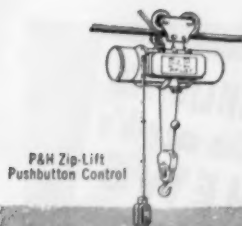
E. A. Holland Exide automotive battery replacement salesman in 1941, and industrial sales engineer in 1949. A native of Bloomfield, New Jersey, Holland attended Newark College of Engineering.

Robert F. Bourne was recently appointed director of sales, national accounts, for The Colorado Fuel and Iron Corporation. Edwin F. Lord succeeds him as general manager of sales for the Claymont Steel Products Department of CF&I.

Carl A. Paulson & Company, Rockford, Illinois, has been appointed a selective distributor by The Cambridge Wire Cloth Company.

James H. Brennan has been named general sales manager of Lift Truck Service Company. He will continue as manager of the firm's industrial engine division, which he has headed since 1953.

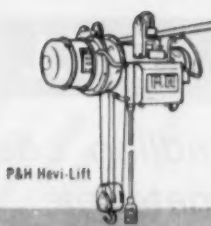
The sales and advertising departments of Tel Autograph Corporation have moved into new offices located at 1128 Crenshaw Boulevard, Los Angeles, California.



P&H Zip-Lift
Pushbutton Control



P&H Hevi-Lift
Special



P&H Hevi-Lift

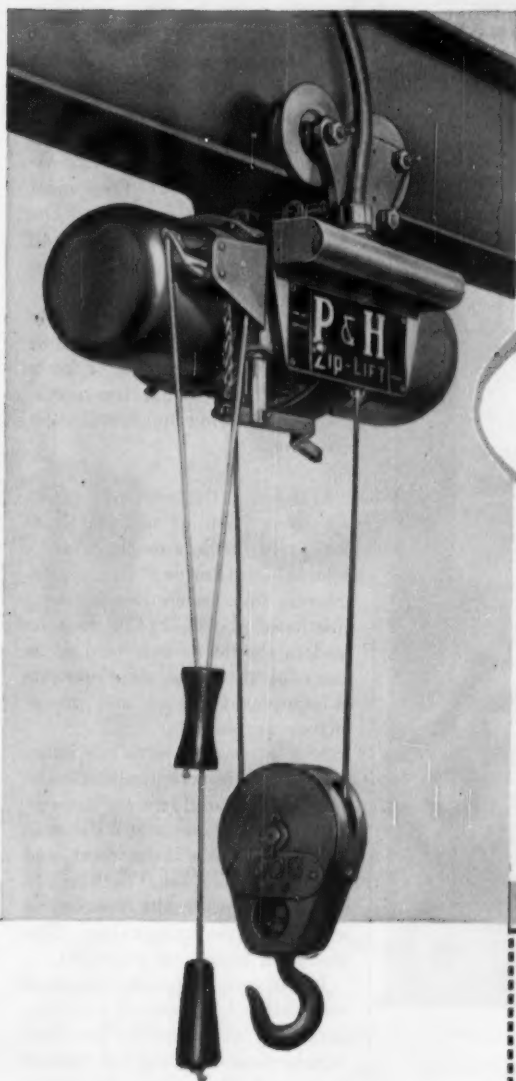


P&H Hand
Chain Hoists



P&H Jib Cranes

Here's News! Now the **P&H** Zip-Lift Special gives you a wire rope hoist at electric chain hoist prices!



HERE'S another new hoist added to the most complete line in the business. And P&H has kept manufacturing costs down so that you can't afford to pass up this terrific value.

Just take a look at the price list on
the new rope-control Zip-Lift Special!

Capacity	Price
250 lbs. - - - - -	\$145.00
500 lbs. - - - - -	194.00
1000 lbs. - - - - -	219.00
2000 lbs. - - - - -	224.00

Two disc brakes on every hoist. Ten feet of lift is standard — available in 14', 18', and 20' lifts at slight additional cost.

Get hold of your P&H Distributor. Ask him to give you the complete information on this new unit — the P&H Zip-Lift Special. If you're in too much of a hurry to wait, send the coupon in to us. We'll see that you get complete specifications by return mail. P&H Hoist Division, Harnischfeger Corporation, 4643 West National Avenue, Milwaukee 46, Wisconsin.

Tear out and mail today!

P&H Hoist Division
Harnischfeger Corporation
4643 West National Avenue, Milwaukee 46, Wisconsin
Gentlemen: The new Zip-Lift Special sounds like a money-saver to me. Send me complete information as fast as you can.

Name _____ Title _____

Company _____ Address _____

City _____ () State _____

HARNISCHFEGER

the **P&H** Line



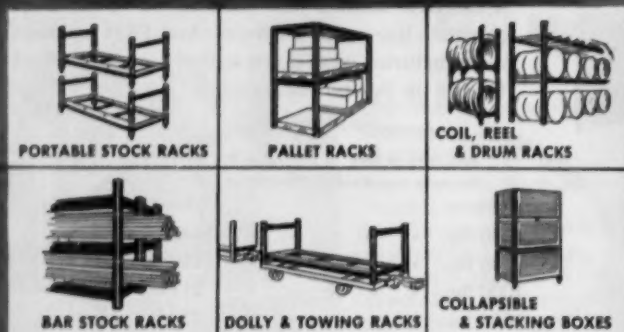
Circle No. 65 on Reader Service Card for more information

AUGUST, 1955

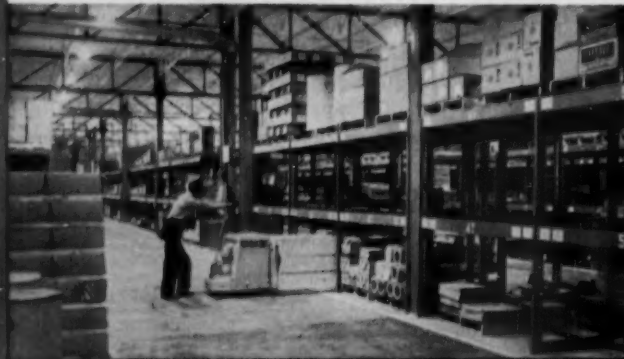
You Can stack ANYTHING on **E.M.I. Racks**

*cut time and handling costs
keep your materials
well stacked!*

Equipment Manufacturing storage racks that stack are fabricated of strong, square tubular steel and are adjustable to fit any space or unit load in your plant or warehouse. Special racks designed to your specifications. Field Engineering Service on any installation. Before you decide on a new warehouse, additional storage space or the purchase of stacking equipment, write for our catalog. You save money, space and time with E. M. I. racks.



E.M.I. Pallet Racks are installed at the efficient American Locomotive Company Warehouse in St. Louis, Missouri.



Write for Illustrated Catalog
**EQUIPMENT
MFG. INC.**

21552 HOOVER ROAD • DETROIT 5, MICHIGAN

Circle No. 47 on Reader Service Card for more information

**HIGHLIGHTS
of the month's
NEWS**

IT'S not at all inconceivable that bookings within the material handling industry for this year will reach \$1.5 billion. Figures released by the Material Handling Institute point to this possibility, and, furthermore, they include only member companies of the following trade associations: Association of Lift Truck & Portable Elevator Manufacturers, Caster & Floor Truck Manufacturers' Association, Conveyor Equipment Manufacturers Association, The Industrial Truck Association and Monorail Manufacturers Association.

This further substantiates the fact that material handling forms a considerable segment of costs in all manufacturing, transportation, warehousing and distribution industries.

In line with the constantly growing recognition of material handling as a fertile area for cost reduction—evidenced by the increasing investments in equipment mentioned above—FLOW feels its readers should be informed of as many of the latest developments in equipment design and manufacture as possible.

And so, starting with this issue, we will devote an entire section to news from manufacturers describing these developments. We're calling it "FLOW's Equipment and Supplies Section" and each month it will comprise the concluding section of the magazine. This month, it begins on page 139.

It will now be possible for men responsible for material handling, packaging and shipping functions to refer to one section for descriptions and illustrations of equipment for improving their operations. Furthermore, additional information on any products can be obtained quickly by using the convenient Reader Service Card bound into the issue.

Brand New!

It's the new
ACKERMANN
BAND-BOX
PATENT APPLIED FOR
SHIPPING CONTAINER

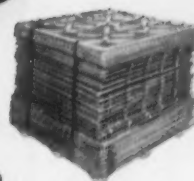
Assembles Easily —
Bottom, sides and top
dovetail. Parts band
together in minutes.



Closes Compactly —
All parts securely
band together to
give utmost protec-
tion to contents.



Transports Easily —
Loads stack securely.
Bottom is an indi-
vidual pallet, sup-
ports over 30 tons.



Fully Nestable and
Re-Usable — Empty
boxes "knock down."
Parts for 12 boxes
occupy space of 1
assembled box.

All-steel, fully nestable, re-usable, self-palletizing, tierable
— it's the practical solution to your inter-plant shipping and storage problems!

Now . . . a shipping container combining all the advantages industry has long demanded . . . yours exclusively in the new Ackermann BAND-BOX!

Light weight to cut shipping costs, plus all the rugged dependability of solid steel. Fully nestable so return trips take little space, plus interlocking

parts to set-up in seconds. Self-palletizing to make fork truck handling easier, plus the ability to stack ceiling-high without toppling.

All this is *yours* with Ackermann's new BAND-BOX!
Get full details today!
Write, wire or call!

ACKERMANN MANUFACTURING COMPANY
WHEELING, WEST VIRGINIA

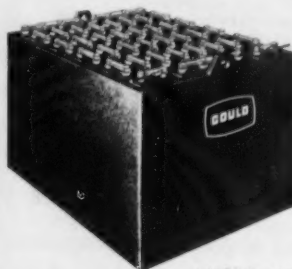




**"Battery Performance
is my Business!"**

Your Gould Field Engineer has one job—to make sure you get greatest possible service from your batteries. In performing that job he sees to it that your batteries are properly cared for and maintained; he instructs your personnel in systematic maintenance methods; he helps you anticipate battery needs; he makes sure you get maximum battery performance.

Gould Field Engineering Service is nationwide. Every member is factory-trained . . . has plenty of on-the-job know-how. There's a Gould Field Engineer in your area. He's as near to you as your telephone. Call him. And when you see him, ask him for the new Gould Plus-Performance Plan material for your battery maintenance staff.



America's Finest
GOULD
Industrial
Truck Batteries

©1955 Gould-National Batteries, Inc.

"BETTER BATTERIES THROUGH RESEARCH"

**GOULD
Batteries**

— GOULD-NATIONAL BATTERIES, INC.

TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries

Circle No. 63 on Reader Service Card for more information



The most efficient way to load, unload, transport and store lumber, pipe, bar stock and other lengthy materials, is with this Towmotor Hydraulic Roll-Off Accessory. It fits over standard pallet forks, and removes easily.

Loading lumber like 'magic'

This Chicago lumber yard reduced loading time 50% with the Towmotor Hydraulic Roll-Off Accessory. *Job-planned* Towmotors handle *all* types of material quickly and economically in *all types* of industries—receiving, processing, storage and shipping. Cost reductions up to 85% are common. See your nearby Towmotor Representative and write for Job Studies on your particular industry—to TOWMOTOR CORPORATION, Division 808, 1226 East 152nd Street, Cleveland 10, Ohio.

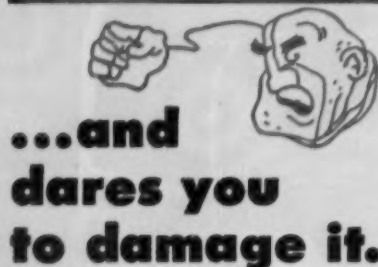
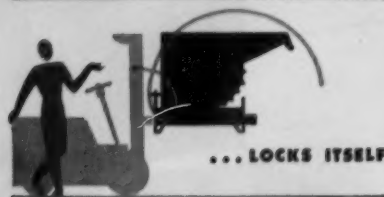
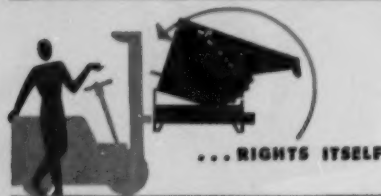
TOWMOTOR
THE ONE-MAN-GANG®

**FORK LIFT TRUCKS
and TRACTORS
SINCE 1919**

TOWMOTORS are made only by TOWMOTOR CORPORATION

Circle No. 127 on Reader Service Card for more information

AUGUST, 1955



This is no ordinary hopper. It's a Roura hopper. And Roura makes 'em rugged. It takes on the toughest assignments . . . day in and day out . . . and comes back for more. Even the crash-bang handling of careless lift truck operators doesn't bother a Roura for it's built of extra heavy metal . . . welded with care . . . braced and double-braced . . . for years of trouble-free service.

Your Roura Self-Dumping Hopper will cut hand-unloading costs at least 50% . . . pay for itself before you know it. Available in sizes from $\frac{1}{2}$ to 2 cubic yards for use with fork or platform lift trucks, mounted on live skids or with malleable or rubber tired casters.

ROURA
Self-Dumping
HOPPER

HERE'S HOW to get more details about Roura Self-Dumping Hoppers. Just attach this coupon to your letterhead . . . sign your name . . . and mail to . . .

ROURA IRON WORKS, INC.
1411 Woodland Ave., Detroit 11, Michigan

Circle No. 112 on Reader Service Card

54

Calendar of Events

September 6-8
Material Handling Institute,
Greenbrier Hotel,
White Sulphur Springs, West Virginia

September 6-17
Production Engineering and Auto-
mation Exposition,
Navy Pier,
Chicago, Illinois

September 6-17
Machine Tool Show,
International Amphitheatre,
Chicago, Illinois

September 12-16
Instrument Society of America,
10th Annual Conference and Exhibit,
Shrine Exposition Hall and
Auditorium,
Los Angeles, California

September 20-22
10th Industrial Packaging & Material
Handling Show,
Kingsbridge Armory,
New York, New York

October 5-9
World Plastics Fair & Trade Exposi-
tion,
National Guard Armory,
Exposition Park,
Los Angeles, California

October 10-12
Joint Military-Industry Symposium on
Packaging and Material Handling,
Washington, D. C.

October 17-21
National Metal Exposition & Con-
gress,
Convention Hall,
Philadelphia, Pa.

October 24
2nd Montreal TIPAC Forum,
Sheraton-Mount Royal Hotel,
Montreal, Quebec

November 8-10
4th Canadian National Packaging Ex-
position and Concurrent National
Conference,
Automotive Building,
Canadian National Exhibition
Grounds,
Toronto, Ontario

November 9-11
19th Annual Time and Motion Study
and Management Clinic,
Sherman Hotel,
Chicago, Illinois

November 13-18
75th Anniversary Annual National
Meeting,
American Society of Mechanical En-
gineers,
Chicago, Illinois

November 14-17
Second International Automation
Exposition,
Navy Pier,
Chicago, Illinois

For Faster, Easier
PALLET MOVING

USE
Weld-Bilt
PALLET TYPE

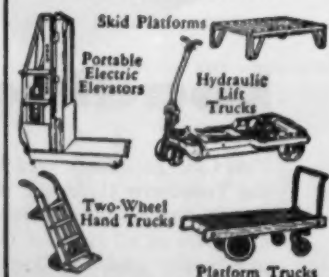
**HYDRAULIC
LIFT TRUCKS**



You'll speed up and simplify pallet-mov-
ing of materials — with the "Weld-Bilt"
Pallet Truck! It's built to handle a greater
variety of single or double-faced pal-
lets easier and faster. Easier on truckers,
too.

Check the design and construction of the
"Weld-Bilt" and you'll know why. The
sturdy forks, with their greased-for-life
ball bearing wheels are easier to handle
and position under loads of 2,000, 4,000
lbs. and 6,000 lbs. Other features include:
Multi-stroke hydraulic lift, accelerator
type lowering pedal, "anti-kick-back"
safety handle, front wheel equalizer, ball
bearing wheels, and many others — all
built for longer service, easier operation.

Write For "Weld-Bilt"
Pallet Truck Bulletin 1149.

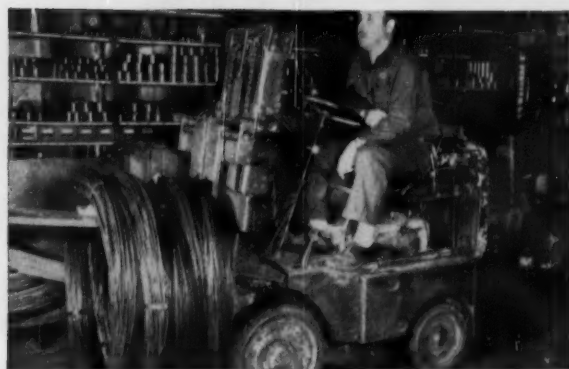


**WEST BEND
EQUIPMENT CORPORATION**
MATERIALS HANDLING ENGINEERS

335 WATER ST. • WEST BEND, WIS.
Circle No. 137 on Reader Service Card
FLOW

B.F. Goodrich

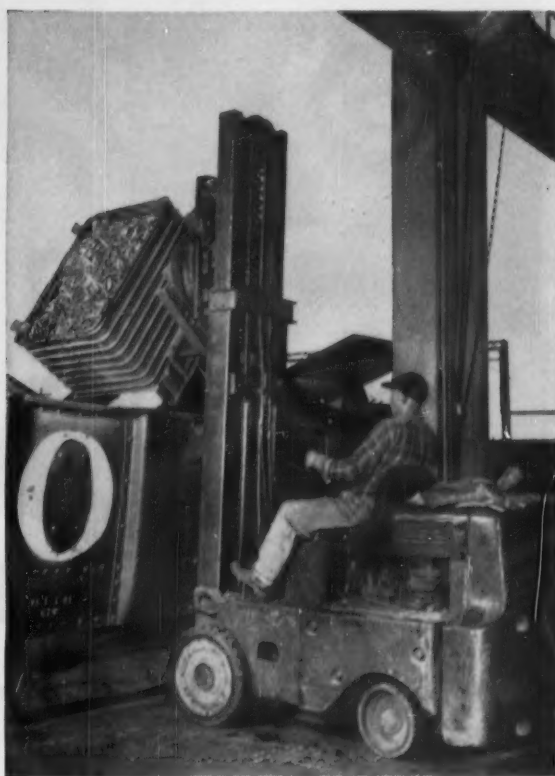
Industrial tires used 100% by bearing factory to keep production rolling



Trucks equipped with BFG tires deliver wire to Cold Heading Dept.



1600-lb. load of outer races leaves the Hand Screw and Press Dept.



Tires roll over sharp steel to dump scrap into rail car.

THE Bower Roller Bearing Company manufactures all types of bearings at its Detroit, Michigan, factory. 25 to 30 materials handling units operate in nearly every department, hauling raw materials, finished products and scrap. And all this equipment rolls on B. F. Goodrich industrial tires.

Why? Because, says Plant Superintendent A. F. Madison, B. F. Goodrich industrial tires do a better job of combating iron and steel scrap, oily floors and other tire hazards. Thanks to the B. F. Goodrich Tire and Wheel Analysis Plan, Bower equipment rolls on the right kind of tire—and that

means the company gets longer tire life, saves money.

How you can save money on industrial tires

Call your B. F. Goodrich Tire and Wheel Analysis man. He'll study your materials handling equipment, loads, hauling surfaces and any special problems you have. Then he'll recommend the right tires for you to use—the right size, tread design and tread compound. The recommendations he makes are unbiased, because B. F. Goodrich makes a complete line of industrial tires.

And this TW Analysis costs you nothing. Put your equipment on the right kind of rubber. It will save you money. BFG consulting service is also available to materials handling equipment manufacturers.

**Specify
B. F. Goodrich tires
when ordering
new equipment**



**The B. F. Goodrich Company
Tire & Equipment Division
Department TW-522, Akron 18, Ohio**

Please send me additional information
on your Tire and Wheel Analysis Plan

Name _____

Company _____

Street _____

City _____ Zone _____ State _____



Circle No. 60 on Reader Service Card for more information

AUGUST, 1955

Put New Efficiency in your . . .

materials handling

. . . and New Economy, too . . .



TAYLORTRUCK
MODEL B-5-72

with **TAYLORTRUCK**

TAYLORTRUCK MAKES THIS PROMISE!

For efficient, economical, dependable materials handling about your plant, you can't beat TAYLORTRUCK! It gives you low initial cost and low maintenance cost, plus years of trouble-free service. Our customers declare TAYLORTRUCK out-performs, out-lasts other trucks in its class!

Electric powered for smooth, silent, fumeless operation! Gives quick acceleration; starts instantly in any weather. Ends forever "cold" starts or "boiling over!" A major airline uses four Model B TAYLORTRUCKS to replace five gas-driven rigs. Reports operation and maintenance cost greatly reduced!

Costs only a few cents a day to recharge batteries; batteries guaranteed 12 months. Single-unit, all-welded frame is built to take abuse.

TAYLORTRUCK can speed up materials handling for you. Get the complete story today; write for our free catalog.

Desirable exclusive dealer territories are still available. Write today for full particulars.



TAYLORCAR Personnel Carrier

It costs money when your executives walk. Get more man hours from your top executives, foremen and superintendents with the TAYLORCAR Model P-3-IN Personnel Carrier. Carries 4 persons; or 2 and 400 lbs. cargo. Sturdy all-welded frame; fibreglass body. Costs only a few cents a day to operate.

TAYLOR MANUFACTURING CO.
10192-E BALL ROAD
ANAHEIM, CALIF.

Circle No. 14 on Reader Service Card for more information

How Efficient Are Your Fork Trucks?

*Do you Really know? . . . Here is
a new method to help you find out.*



by Forrest W. Soper
Material Handling Engineer
Euclid Division
General Motors Corp.

This is a comprehensive report of a study made to improve utilization of fork trucks. Self-recording test equipment was developed especially for the study, and comparison tests were conducted between two types of fork trucks on different work assignments in an industrial plant.

The author believes that, by conducting before-and-after studies with this equipment, the material handling industry will now have a method of evaluating work methods, work areas, supervision, operator training, functional design and preventive maintenance of fork trucks.

Mr. Soper formerly was packaging and material handling engineer at the Euclid Road Machinery Company. He holds a B. S. in electrical engineering and an M. S. in industrial engineering from Case Institute of Technology.

BECAUSE of its flexibility and the amount of work it can perform, the fork truck is often the hub of a material-handling system which includes the use of pallets and unit loads. Yet, very little has been done in the past to make sure the fork truck operated efficiently. The difficulty in obtaining exact data on the work methods of the truck has heretofore blocked most attempts to find out how much work it could really accomplish.

However, recent progress has brought about a questioning attitude. Progressive managements have not been completely satisfied with the present standards of material handling as set by the fork truck and have begun to ask industrial engineers questions like the following:

1. How many fork trucks do we need?
2. Are all of these fork trucks necessary?
3. Can the fork truck do other types of work?

The study described in this article was conducted in an effort to show the industrial engineer how to find answers to these questions.

Four Methods Considered

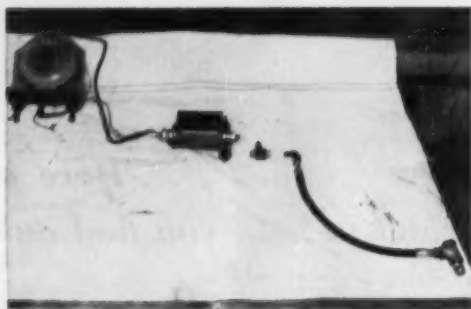
In deciding how to measure the work efficiency of the fork truck, four methods were considered. Two were based on useful work accomplished and the other two on all work accomplished, be it productive or non-productive. The useful work methods required the application of motion-time study plus a mock-up

(More on next page)

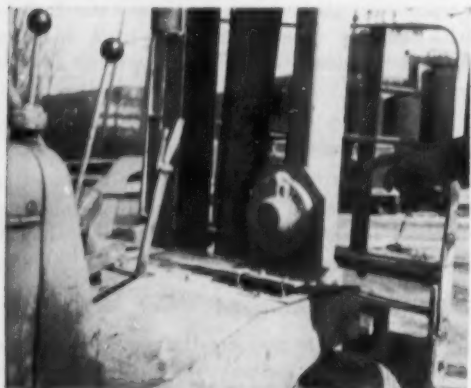


HOW EFFICIENT ARE YOUR

PNEUMATIC-TIRED TRUCK, designated as Truck No. 2 for the study described in this article, has 6000-pound capacity, 10 mph speed.



COMPLETE LAYOUT of testing equipment arranged in the same manner as when mounted on test trucks. "T" connector at far right is fastened to the main hydraulic valve of the truck. Pressure switch (center) utilizes a bourdon tube to register fluctuations in hydraulic system, as when load is placed on forks. Two-way needle-valve (between pressure switch and rubber hose) dampens oil surges which occur when fork truck travels over rough terrain, insuring extreme accuracy.



TIME-MOTION-LOAD RECORDER was attached to each truck to give record of times when trucks were in motion and when loads were being carried on forks. To dampen jars and jolts, the recorder was mounted on truck on rubber pedestals.

work area to simulate ideal conditions. By comparing operations done under regular working conditions with those under the ideal setup, the amount of non-productive work under regular conditions could be determined. Research groups, utilizing many people, have developed efficiency studies similar to the method above. It was decided that a less time-consuming and more automatic way had to be found.

A third method analyzed, involved the amount of foot-pounds of material moved. Such a measure would provide a basic yard-stick to develop material handling costs. This method's formula compared the amount of foot-pounds accomplished under regular working conditions to the foot-pounds possible as determined by the mechanical limitations of the fork truck. The test equipment required for this method had to totalize all individual weights placed on the forks and record both the vertical and horizontal travel of loaded forks. To by-pass the necessity of developing elaborate testing equipment, another possibility was considered.

Modified Efficiency

If we could devise a simple load indicator which would indicate every instant a load was placed on the forks, and which would have the facilities for totalizing the times, then the time factor, rather than the load factor, could be used to determine a modified form of efficiency.

The formula for this efficiency would be:

$$\text{Efficiency} = \frac{\text{Total time fork truck had load on fork} \times 100}{\text{Total Time}}$$

The question immediately arises, "Will this modified efficiency formula provide us with the answers for this study?" The answer is that it will because we assume that every time the fork truck operator has a load on his forks, he is doing work, whether it be useful or not useful. The main object of the study was to prove a need for improving upon the utilization of the truck. If the truck had a load on its forks 100% of the time, maximum use would be obtained from that truck regardless of the weight of the load. Industry, itself, puts a limit on how much of a unit load (volume and

FORK TRUCKS?

Continued

SOLID-TIRED TRUCK was designated as Truck No. 1. It too had 6000-pound capacity but was used for handling over relatively short distances.

weight) can be moved. A fork truck cannot be expected to carry a maximum load at all times to be efficient, but it can be expected to carry a load as much of the time as possible.

It is important to note, however, that a load indicator is unable to reveal the inefficient operation of the fork truck when it is loaded. In other words, the loaded fork truck on extended hauls may have to accelerate and decelerate many times because of impeding traffic, narrow aisles, low head-room, poor lighting, inclines, etc. The only way that the load indicator can assist in determining the efficiency of such an operation is by means of a before-and-after study.

We have not included before-and-after studies in the scope of this article because considerable revamping of work areas, methods, etc. will be involved before our recommendations can become reality. Our study was conducted under actual working conditions where wholesale alterations would seriously interrupt production. For this reason, it is intended to make alterations and further studies over an extended period.

The method of testing did show up wasted motion when the truck was empty, but, as mentioned above, did not show wasted motion when it was loaded. Dead-heading was readily detected by means of a load indicator developed especially for the study. It could point out certain weaknesses and show a need for improvement, but did not offer any solutions. Therefore, in addition to the field testing, a study has been made to work out possible solutions to some of the inefficiencies pointed out by the test equipment.

The solutions suggested seem to have fallen into five categories: (1) material handling system (work areas and methods); (2) supervision; (3) employee training and education; (4) fork truck design; (5) preventive maintenance. These five categories will be discussed at some length in Part II of this article in the September issue of FLOW.

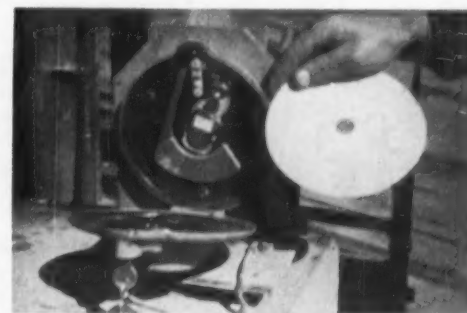
The main pieces of apparatus used in the field tests were the following:

1. Solid rubber-tired fork truck—capacity, 6000 pounds with load centered 24 inches from the heel of its 42-inch long forks. Top speed, 7½ mph. Maximum lifting height, 172 inches at a rate

of 20 fpm. up and 26 fpm down. It was designated as Truck No. 1. The truck's function was to receive material on pallets, or in skid bins, and stock in a confined outdoor concrete area. Long trips were kept to a minimum.

2. Pneumatic-tired fork truck—capacity, 6000 pounds, rated with load centered 24 inches from the heel of its 36-inch long forks. Top speed 10 mph. Maximum lift, 136 inches at a rate of 20 fpm up and 26 fpm down. It was designated as Truck No. 2 and had a specific job in the receiving and shipping areas of the parts replacement department. Its function was to order-pick all yard material and to stock parts. Normal area covered was about three times that worked by Truck No. 1.
3. An odometer to indicate distance traveled. An adapter plate was made so that the odometer could fit on Truck No. 1. However, the casing was too large for any one of the wheels on Truck No. 2, and distance-recording was eliminated from the second series of field tests.
4. Time-motion-load recorder. This commercially available instrument has a sharp knife-edge

(More on next page)

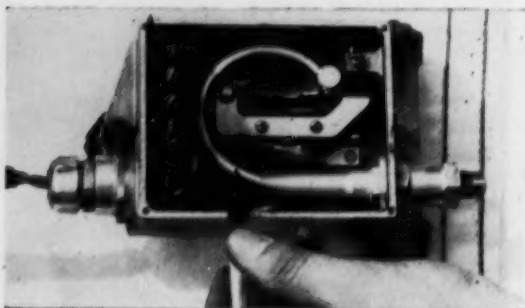


INTERIOR MECHANISM of recorder includes pendulum, relay and two styli. Operator is about to insert blank chart into recorder at day's start.

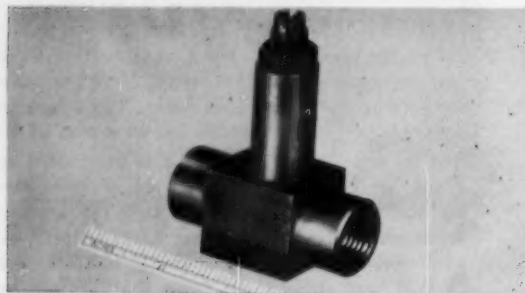


HOW EFFICIENT ARE YOUR FORK TRUCKS?

Continued



PRESSURE SWITCH which utilized a sensitive bourdon tube to register fluctuations in the hydraulic system of fork trucks. Movement of the bourdon tube actuated a small automatic re-setting, single-pole, double-throw, snap-action switch which in turn energized a relay.

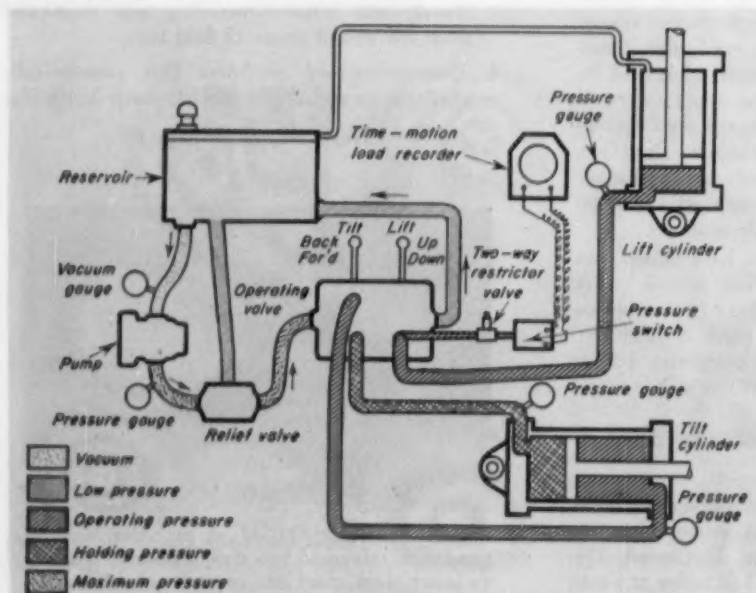


TWO-WAY RESTRICTOR VALVE was one of big secrets of the success of the test mechanism. It dampened fluctuations in the hydraulic system (when the trucks traveled over rough terrain) and increased accuracy.

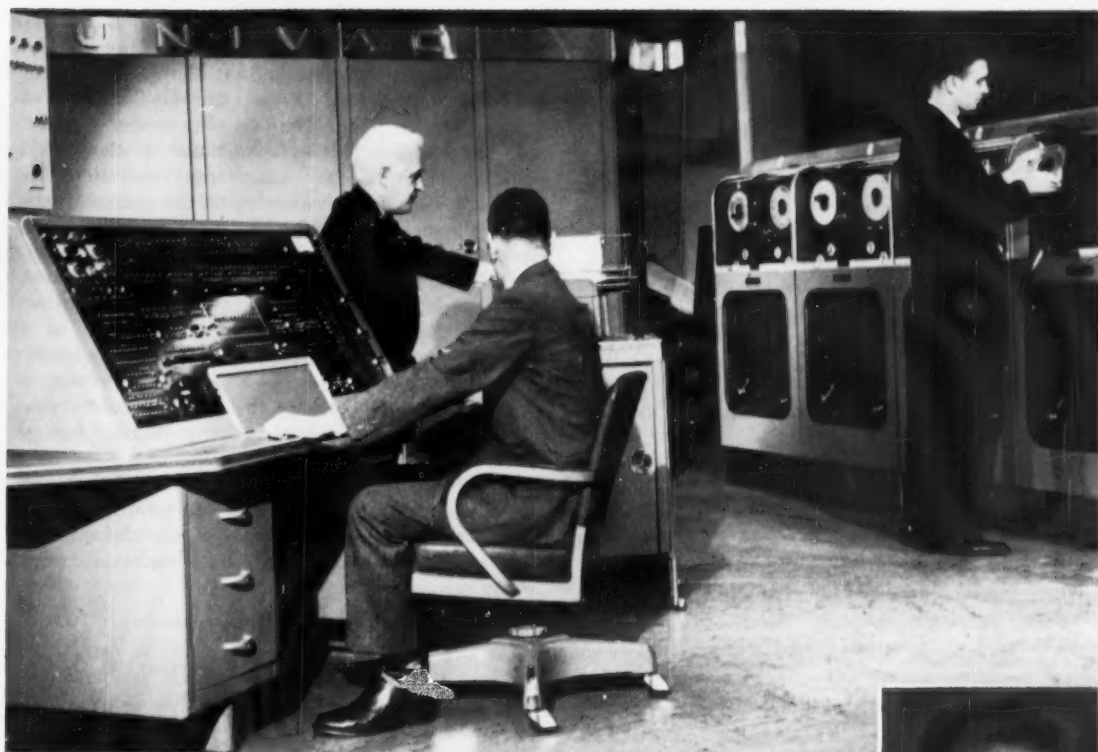
stylus attached to a pendulum which oscillates freely through an arc of 30°. The pendulum remains stationary as the vehicle, in motion, vibrates. The stylus describes a zigzag line on a waxed disk which is firmly attached to the vibrating vehicle. The disc rotates one revolution in a clockwise direction every hour. A hand-wound clock mechanism turns the waxed disk. On standard model recorders, a second stylus, attached to a simple relay connected to the ignition system of the vehicle, indicates engine running time. Because this type of information was of minor importance to our tests, we utilized the relay and stylus in conjunction with a hydraulic pressure switch to indicate loads on the forks of the truck during a four-hour cycle. So that true running and loading-time registered on the instrument, the whole recorder was mounted on rubber.

5. Pressure switch—utilizing a sensitive bourdon tube to register fluctuations in the hydraulic system of the truck, the oil pressure in the system would increase sufficiently to move the bourdon tube. This actuated a small automatic resetting, single-pole, double-throw, snap-action switch, which in turn energized the electric relay in the load recorder.
6. Two-way restrictor valve—to dampen oil surges in the line. This device was an important key to the success of our entire series of tests. We found it was necessary to dampen out sporadic fluctuations in the hydraulic system when the fork truck traveled over rough terrain. A two-

(Continued on page 88)



HYDRAULIC SYSTEM of fork truck with position of restrictor, pressure switch and time-motion-load recorder indicated.



Production Control by Electronics



By Dr. H. F. Mitchell
Director of Applications
Electronic Computer Dept.,
Remington Rand Inc.

Companies large and small can now use processing and computing equipment that will complete in minutes such time-consuming tasks as scheduling, inventory control and programming.

FASTER, more accurate methods of production control through electronics are a reality today. Industry and business are not waiting for a vague "something" to take place tomorrow—or in the indefinite future. They are realizing the benefits available through the application of electronic data processing systems, such as the "Univac", right now.

The step into this new era was dependent upon the development of electronic methods to process the huge volumes of paperwork generated in the production control process. You can activate a machine, set wheels turning and motors humming, by pressing a button. But you never do it until a great amount of

data has been processed and tremendously time-consuming calculations have been completed.

The battle for the ideal in factory efficiency had to begin with the need for office equipment that would operate faster, more accurately, and with more versatility. Production Control requires that the running facts about a job be at hand before the job is started, while it is in process, and after it has been completed. The electronic computer employed as a unit in Production Control, brings to the work of data processing what mechanized material handling and automatic machines bring to material processing.

(More on next page)

Where the need has been for even greater operating speed and versatility, the large-scale Univac has been brought into play. This data processing system is com-

This is where the revolutionary aspect of electronic production control comes in. Never before has management been in the position to get essential information in such complete form, with complete accuracy, so quickly.

What all this means in terms of data processing may be illustrated by presenting the case of a hypothetical manufacturer of automobiles. Management proposes

[illegible]

WITH DETAILED DATA, on sound engineering basis, electronic computer will quickly and accurately supply digested data for individual parts of proposal.

to produce a given number of cars in a given number of models. Management wants to prepare for this production with "open end" arrangements for color combinations, upholstery choices and other optionals. Management wants the data from which to establish price structures, delivery data, sales quotas, etc.

What is being asked for here is impossible for data processing by manual methods, and exceedingly difficult and costly even by conventional mechanized procedures. There will be a minimum of 20,000 stock items in inventory. Some 50,000 workers in many different categories and at varied hourly wage levels will be involved. Several hundred different plant operations are required. Hundreds of outside sources of supply are concerned.

All the facts and figures must be processed before any sound conclusions can be made by management. There are, of course, phases of this overall project which conventional methods can produce, but in how long a time and at what cost?

Once the data is assembled, Univac will supply accurately digested data for individual parts of the proposal in hours. It can supply the entire picture in a few days.

This, of course, is the big difference between the new and old systems. Electronic office machinery is not just an extension of the capacity of present data processing units. It is an entirely new type of equipment, requiring new levels of thinking on the part of management. The difference in performance quantitatively is so very great that a qualitative change takes place in all aspects of data processing when the electronic method is employed for production control.

That is why the various elements of data processing which go to make up the final report to management, on its proposals, deserve to be looked at separately.

For in each phase of the work there are opportunities to develop data never before possible.

For example, there are delivered reports involving an almost unlimited number of materials or parts as follows:

A Daily Shortage Report—to channel the attention of procurement men to stacks of materials which are getting lower than "protective levels" require. This report identifies an item, indicates the quantity of protective stock required, the balance on hand, the "near future" requirements, and the open items on the vendors' shipping schedules.

The Daily Transaction Listing—for reference purposes.

Weekly Spoilage Reports—with indications of responsibility for the spoilage.

Weekly Overage Reports—to alert control men and buyers to the existence of excess inventory.

Order Lists—indicating among other data economical quantities to order, on hand balances and open purchase orders.

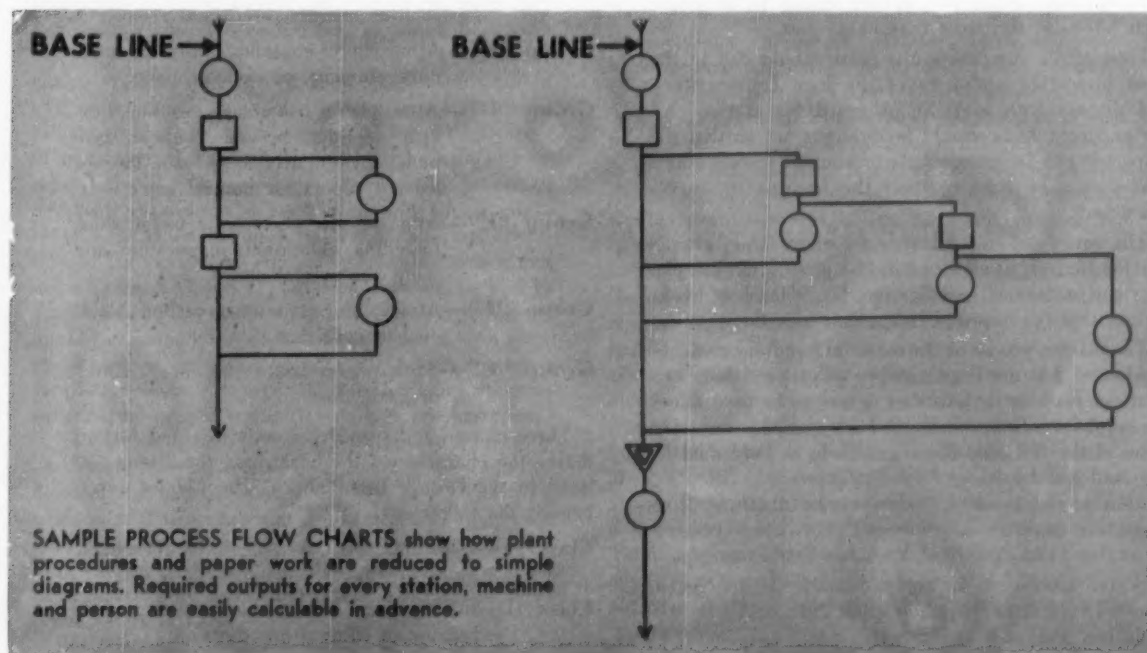
Monthly Inventory and Commitment Reports—for each department, listing quantities on hand and commitments, along with standard extensions for each item of stock.

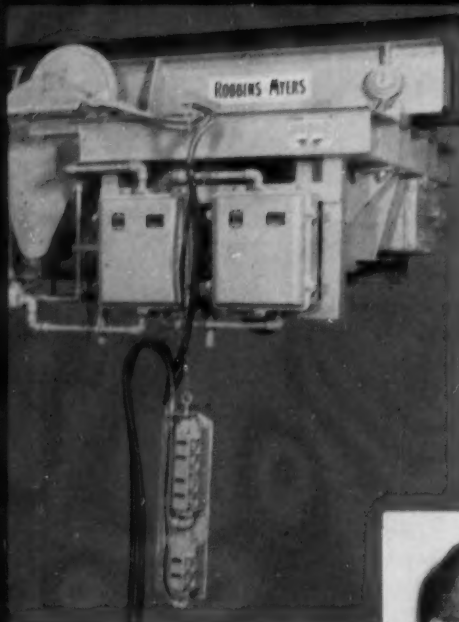
Weekly Transactions Listings.

Weekly Complete Material Record File—a printed copy for every department.

These reports do not, by any means, exhaust all the reports that are being made available for better control of materials by Univac. It offers new opportunities for data processing in other phases of plant management. You will find factories improving work load

(Continued on page 86)





SAFE for operation in atmosphere containing fine dust, this hoist is designed for conditions of Group G, Class II, Div. 1.



By C. E. Schirmer

Chief Engineer, Hoist & Crane Division
Robbins & Myers, Inc.

Factors to consider when . . .

Selecting an Explosion-

DEMANDS for electric hoists for use in hazardous locations have been increasing each year.

However, the specifications issued by the purchasers have not been as specific as they should be to secure such hoists at the most reasonable cost.

First of all, the prospective user should call in the local inspecting authority of the Fire Underwriters' and discuss with him the proposed installation. All the pertinent facts should be brought out so that the inspector can recommend the minimum specifications that should be used to meet the hazards to be encountered.

The variety of such hazards are many. Only after a careful analysis of all elements comprising the installation can a factual specification be selected to make certain that the required safety is achieved.

The plant engineer or the material handling engineer—whoever has the responsibility to prepare the specifications for electric hoists or cranes to be used under hazardous conditions—should have available the latest issue of the National Electrical Code as published by the *National Board of Fire Underwriters*. The 1953 edition is the latest. Copies may be obtained from inspection departments or from Underwriters' Laboratories Inc., Chicago, New York, or San Francisco.

Seven groups of atmosphere mixtures are listed. These are identified by the capital letters "A" to "G" inclusive. They are as follows:

- Group "A"**—Atmospheres containing acetylene.
- Group "B"**—Atmospheres containing hydrogen, or gases or vapors of equivalent hazards such as manufactured gas.
- Group "C"**—Atmospheres containing ethyl-ether vapors, ethylene, or cyclo-propane.
- Group "D"**—Atmospheres containing gasoline, hexane, naphtha, benzine, butane, propane, alcohol, acetone, benzol, lacquer solvent vapors, or natural gas.
- Group "E"**—Atmospheres containing metal dust, including aluminum, magnesium and their commercial alloys.
- Group "F"**—Atmosphere containing carbon black, coal or coke dust.
- Group "G"**—Atmospheres containing flour, starch or grain dust.

Three classes and two Divisions also listed further define the character of the hazardous conditions outlined in the Groups listed above. The Classes cover, briefly, the following:

- Class I**—Locations are those in which flammable gases or vapors are involved.
- Class II**—Locations are those which are hazardous because of combustible dust.

Proof Electric Hoist

Class III—Locations are those which are hazardous because of the presence of easily ignitable fibers or flyings, but in which such fibers or flyings are not likely to be in suspension in air in quantities sufficient to produce ignitable mixtures.

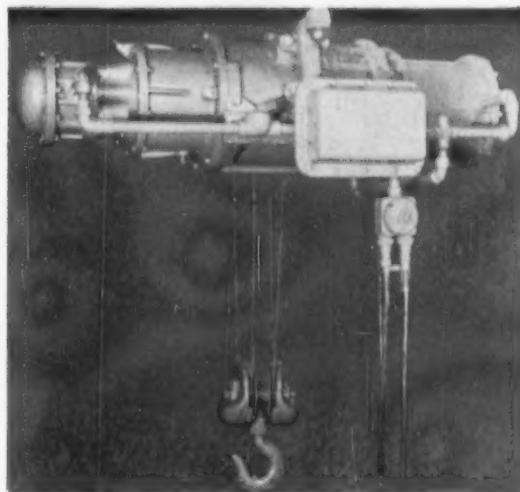
The one group that seems to be specified most frequently is Class I, Group "D". Class I locations have two Divisions.

Class I, Division 1 locations are those in which hazardous concentrations of flammable gases or vapors exist continuously, intermittently or periodically under normal operating conditions—or locations in which such concentrations may exist frequently because of repair or maintenance or because of leakage. Also, locations in which breakdown or faulty operation of equipment or processes which might release such hazardous concentrations might also cause simultaneous failure of electrical equipment.

Class I, Division 2 locations are those in which flammable volatile liquids or flammable gases are handled, processed or used, but in which these will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown of such containers or systems or in case of abnormal operation of equipment. Or locations in which hazardous concentrations of gases or vapors are normally prevented by positive mechanical ventilation, but which might become hazardous through failure or abnormal operation of the ventilating equipment. Or locations which are adjacent to Class I, Division 1 locations, and to which hazardous concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clean air, and effective safe-guards against ventilation failure are provided.

Now let us assume that the conditions to be met by an electric hoist in a hazardous location are found to demand the use of Class I, Group "D", Division 1 equipment. This means that all the electrical equipment such as motor, control panel, magnetic motor brake, limit switch, push button station, and all wiring must be designed, built and installed to meet those specifications.

But if the Class I, Group "D", Division 2 equip-



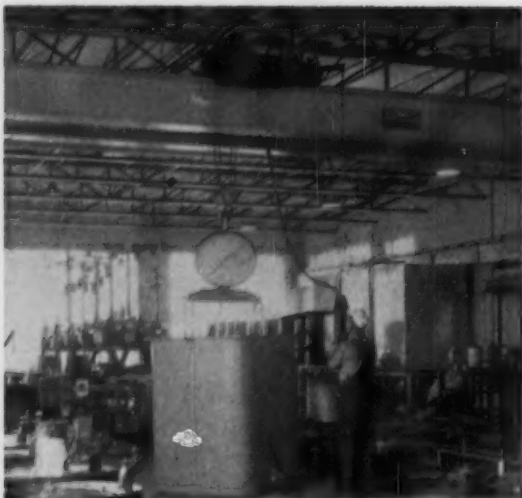
ENCLOSED in conduit with proper fittings are limit switch, contactor case and wiring of electric hoist.

ment can be used it means that only those items that employ sliding contacts, centrifugal or other types of switching mechanism (including motor over-current devices) or integral resistance devices, either while starting or running, must be designed, built and installed to meet the Class I, Group "D", Division 1 specifications.

When applied to an electric hoist this would permit use of a standard squirrel cage polyphase induction motor, as it has no brushes or switching mechanism. The standard magnetic motor brake can be used as it does not have any device to make or break a circuit. But the control panel, limit switch and push button station must meet the Class I, Group "D", Division 1 specifications. The use of a standard motor and motor brake reduces the extra cost involved when compared to the requirement for Class I, Group "D", Division 1 specifications. In some cases it permits the hoist builder to use a smaller frame hoist because it is not necessary to provide for the larger frame motor designed to meet the hazardous specifications. Consequently, the hoist would be smaller, weigh less, be more compact and have better headroom.

The Underwriters' Specifications, as outlined in the National Electrical Code, are confined to the electrical equipment of electric hoists. A spark produced mechanically can be just as hazardous as one produced electrically. A hoist will frequently be required to travel along a monorail beam. For non-hazardous areas cast iron wheels are widely used for either plain push-type hoist trolleys, while cast steel or forged steel wheels are generally used on motor driven trolleys. For hazardous locations, bronze wheels or other alloys which are non-explosive and non-arcing should be used. These may be aluminum, stainless steel, rubber, or anything similarly suitable. Each explosive location must be singularly analyzed. These materials would be

(More on next page)



GROUP D situation in paint and varnish plant. Current is supplied to all motors on crane by conductor cables automatically wound on explosion-proof cable reels.

desirable especially for motor driven trolleys where sudden starting or stopping may cause the wheels to spin or slide and thereby cause sparks to be created.

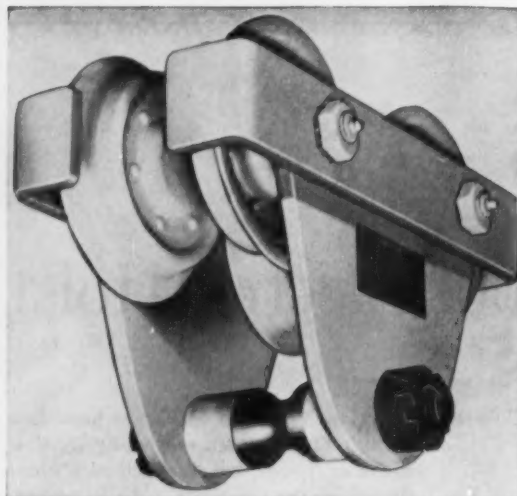
As the hoist trolley travels along the monorail it occasionally will be permitted to bump into the end stops provided. To prevent formation of sparks, either or both the ends of the trolley and the faces of the end stops should be provided with brass plates.

Since the bottom block hangs down below the hoist, like a pendulum, it can, especially when it is not loaded, swing and if it should accidentally strike some steel object, a spark may be formed. If the particular location presents such a possibility, then the bottom block should be made of bronze or other materials mentioned for trolleys. This, by the way, is a rare requirement, but it should not be overlooked in cases of extreme hazard.

When a hand geared trolley is used it is usually customary to use a brass handchain to prevent sparking when the chain is pulled over the pocketed chain sheave and through the chain guide.

Of course, open wiring with the contact type collectors should not be used. Multiple conductor flexible rubber or plastic covered cable must be used. Such cable supported from suitable messenger wire by means of brass links that permit the cable to be looped as the hoist travels along the monorail has been used frequently. Another method is use of a takeup reel to handle such multiple conductor cable. Such takeup reels have to be built to meet the Underwriters' specifications for such use, and consequently are not available in the large range of sizes that prevail for non-hazardous equipment.

While all electrical items entering into the construction of an explosion proof electric hoist are designed to meet the Underwriters' specifications for hazardous locations—according to each maker's interpretation of



SPARK- and corrosion-resistant trolleys for hazardous atmospheres have deep-flanged wheels made of such materials as bronze, aluminum, stainless steel & rubber.

those specifications—all those items do not necessarily carry the Underwriters' label. This is so because before such a label can be used such equipment must be sent to the Underwriters' to be tested by them. This expense is considerable, and it is not incurred unless the probable demand for such equipment is sufficient to justify it. At the present time some types of motors and magnetic brakes do carry the Underwriters' label.

Every reputable manufacturer of electrical equipment for use in hazardous locations does carefully follow the required specifications issued by the National Board of Fire Underwriters'. Each item does carry the respective manufacturer's label which identifies it for the respective classification for which it is designed. Such labels also carry a cautionary statement calling attention to the necessity of disconnecting the device from the circuit before attempting to enter the device enclosure or to work upon them and of maintaining proper assembly of the devices at all times.

The use of non-sparking chain slings, tongs or grabs should be carefully considered as they are an important part of a material handling problem in a hazardous location. Such items are available. Non-sparking tools should be used when performing maintenance work on equipment in hazardous locations. Not available are such tools made from special bronze alloys of strength and hardness approaching those of forged alloy steel tools. The National Safety Council recommends the use of them.

The careful analysis of all factors entering into the selection of the equipment required for use in a hazardous location must be made if maximum safety is to be assured at minimum cost.

Photos courtesy Robbins & Meyers, Inc.; Manning, Maxwell & Moore, Inc.; and Shepard Niles Crane & Hoist Co.



RAW MATERIALS are received in rail car shipments, and the overhead crane equipped with either clam-

shell or magnet unloads the pig iron, scrap, coke or limestone into charging bins or into yard storage piles.

Mechanized Handling In Foundry Cuts Worker Fatigue, Adds Safety

*What Mechanized
Material Handling
Means to Employees of . . .*

Crouse-Hinds Company

This is the second in a new FLOW series describing how a number of companies, through their public and industrial relations activities, have kept their employees informed of the many benefits to be derived from efficient, mechanized material handling methods.

Here is the Crouse-Hinds Company story, originally told through the company publication, *Family Circle*, which is edited by Miss Ellen W. Van Dusen.

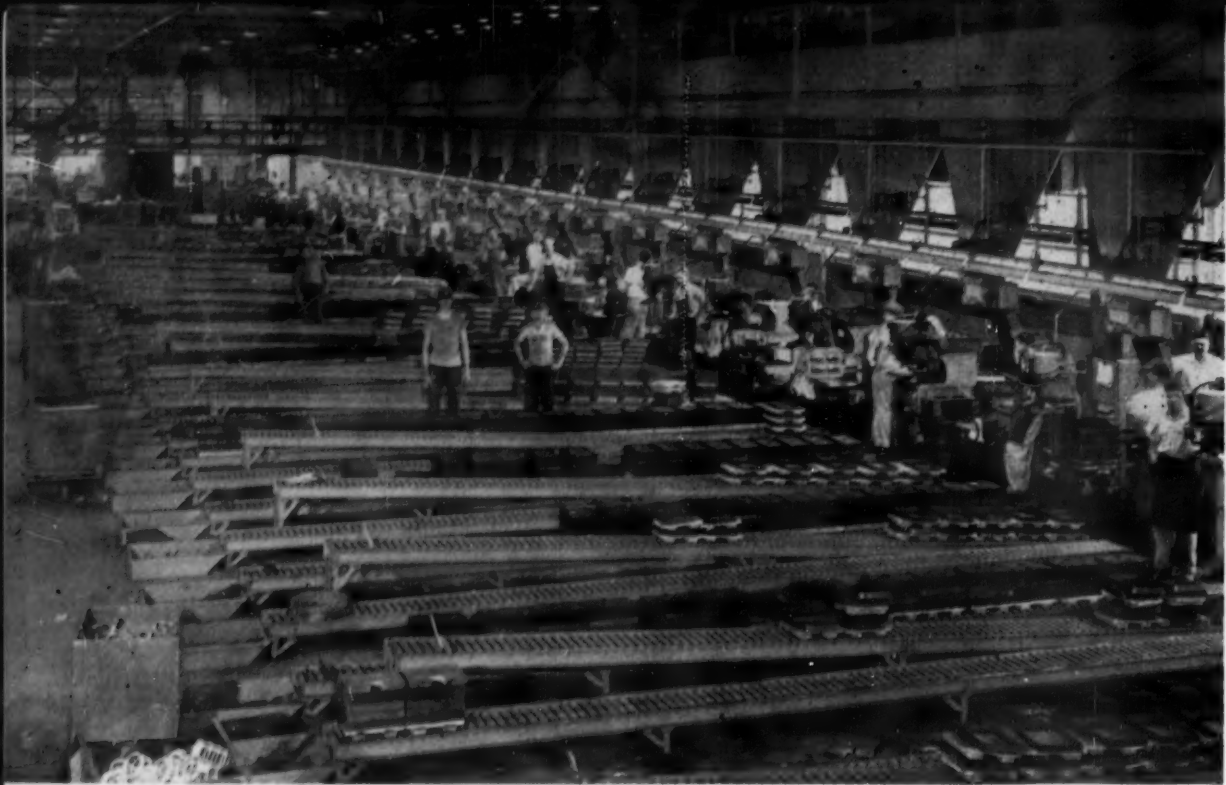
EFFICIENT handling methods at Crouse-Hinds Company have so successfully taken the back-breaking labor out of handling materials that it's difficult to visualize men lifting pig iron by the piece, piling it, then carrying it again to the foundry. But old pictures prove such methods were once used.

Let's take a look at the machines and equipment which, as they have been installed through the years, have removed some of the hardest of men's work and have made Crouse-Hinds a much safer place to work.

Hand Shoveling Eliminated

Core sand, for example, is no longer shoveled. It arrives in dump trucks, is unloaded over a grated hopper and carried by conveyor to five large storage bins. It remains in the bins until it is fed automatically to a scale hopper on the balcony over the core room. There, in sand mixing equipment, it is mixed with oil and cereal binders to the right consistency for cores. After mixing, it is taken by small hopper

(More on next page)



ROLLER CONVEYORS in non-ferrous foundry remove molds from molders' stations to shakeout hoppers.

Sand is delivered by belt along balcony, and another belt under the floor returns the sand to sifter and bins.



CHARGING CRANE picks up drop-bottom bucket filled with raw materials, dumps charge into cupola.

buggies to openings in the floor through which the sand is fed to coremaker's hoppers on the floor below.

As coremakers finish trays of cores, they place them on racks which move slowly on an overhead chain conveyor traveling alongside the work stations and on into ovens which bake the cores.

Work Was Once Back-Breaker

Since raw materials used in foundries are heavy and bulky, years ago, the hardest kind of manual labor was required to keep the foundry in operation. Today, by comparison, incoming railroad cars filled with pig iron, scrap iron, coke and limestone are unloaded by an overhead crane equipped with clamshell and magnet. Unloaded materials are stored in charging bins, or, if necessary, stored in the yard for later use.

The charging bins feed charge buckets for the huge cupolas which melt the pig iron, scrap steel, limestone and coke in proper proportions to make castings. Workers ride in front of the bins on an electric car equipped with scales, dragging down raw materials into large buckets for melting. When a bucket is filled, it is lifted by crane to the top of the foundry and dumped into the cupola.

Molten metal flows from the cupola into the large reservoir ladle controlled by wheels which slowly turn the ladle, emptying part of its contents into transfer ladles, sometimes called "bull" ladles. Ladlemen push these transfer ladles from station to station on an overhead monorail.

Men on the pouring ladles, with the help of mechanical linkage, raise and lower their smaller ladles to re-



ELECTRIC SCALE CAR moves in front of charging bins for easy filling of buckets with raw materials.



TRANSFER LADLE is monorail-supported for quick moving and pouring of molten metal to pouring ladle.

ceive the molten metal. Guiding the pouring ladle as it is suspended from the monorail, they pour the iron into molds which move on an endless conveyor system which brings molds from molders' stations to the pourer and on to the shakeout.

At the shakeout, molds are broken open and loose sand and cores shaken out. The hot castings are conveyed on a steel belt through decoring screens to areas for sorting, cleaning and restoring into tote boxes. These boxes are placed on roller conveyors for delivery to grinders in the cleaning and grinding room. Grinders transfer the boxes from the conveyor at waist level down small roller conveyors to their grinding wheels. Rough ground castings are returned to the main conveyor system for weighing. These castings then go through wet milling, come out on a sorting belt and are placed in containers.

Trucks, Conveyors Move Castings

After castings are machined, fork trucks move them to conveyors leading to the plating room. Condulets are loaded on racks attached to an overhead chain conveyor. As the conveyor descends to the ground level from the second floor, racks are lifted from the conveyor and placed on rods in preparation for plating. Moving automatically through the block-long plating tanks, racks are raised and lowered into the plating solutions.

In the plating department, recent improvements in handling acids have removed many of the hazards accompanying that operation. Formerly, muriatic acid
(*More on next page*)



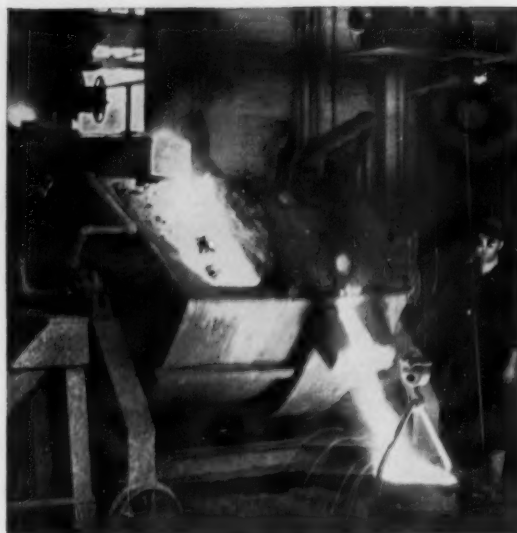
BOTTOM-DUMP HOPPER BUGGY receives sand from mixer, feeds coremaker's hopper through floor.



FRONT-END LOADER scoops up sand from shakeouts and dumps it into mixer, thus eliminating shoveling.

was handled in 13-gallon carboys which were emptied into pails, then lifted over a high cross bar to fill the plating tanks each time they were cleaned—about every three months.

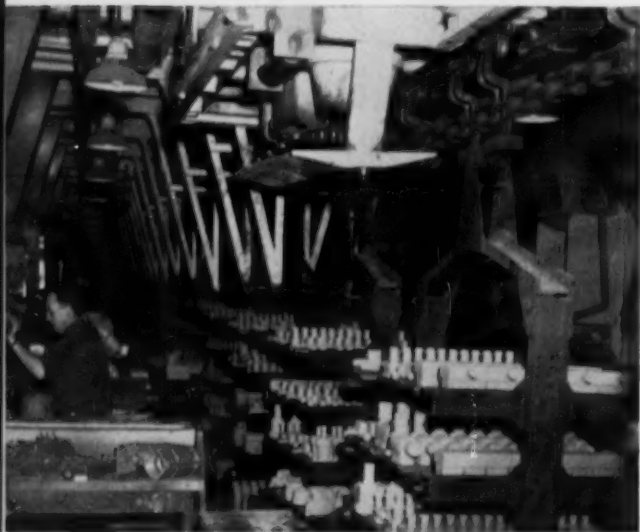
A 12,000-gallon tank was recently installed on the roof of a sand shed outside the plating room. Acid is delivered by tank car on the railroad siding and pumped into the storage tank, thus eliminating the dangers of burns to clothing and body, as well as eliminating rehandling of the liquid and heavy lifting of the carboys. As acid is needed in the plating process, platers draw it from the storage tank by valve.



MOLTEN METAL is poured from cupola to reservoir ladle, then into transfer ladle hooked onto monorail.

After racks of Condulets leave the plating tanks, they are transferred again to the endless conveyor which carries the castings into a vinyl resin dip tank and on to assembly. There, women remove them from the racks and sort for packing or place them into containers for further assembly and packaging.

Packaged products are sent by belt conveyor to the stockroom, where the packages are removed and stored on shelves until they are requisitioned to fill orders. In filling orders, stock clerks place packaged products on another belt conveyor which takes them to the shipping room.



OVERHEAD CHAIN CONVEYOR takes trays of finished cores placed on rack and carries them to oven.



FINISHED PRODUCTS to be warehoused are palletized, transported and stacked by electric fork truck.



PLATED CASTINGS leaving the plating tanks are transferred, racks and all, to assembly line conveyor.

Large products to be placed in storage are sent to the warehouses. Placed on pallets, they are transported and stacked by electric fork truck.

Non-Ferrous Foundry Mechanized

Equally as efficient, both from a labor and safety standpoint, are the handling methods employed in the non-ferrous foundry. Sand is delivered to hoppers at molders' stations by belt conveyor, and another belt conveyor under the floor returns sand to sifters and bins. Roller conveyors carry molds from molders' stations, after metal is poured, to shakeout hoppers.



ROLLER CONVEYORS carry castings to grinders' stations. Tote boxes slide easily to individual stations.

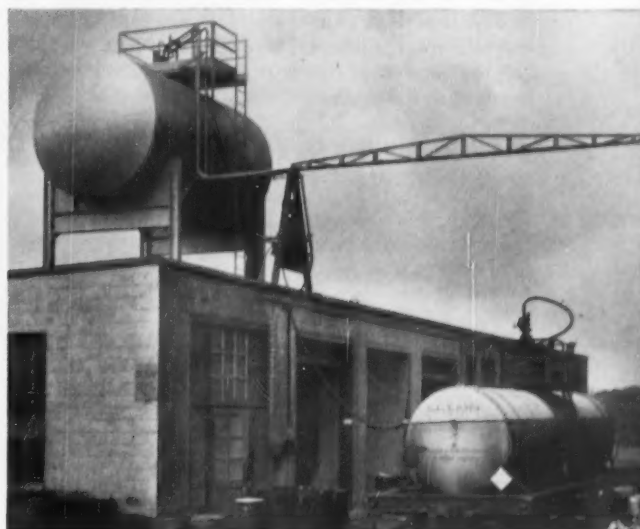


PLATFORM TRUCK carries shop boxes filled with castings from cleaning room to machining operations.

Motors in the sand-handling system are interlocked to shut off automatically if one of them fails.

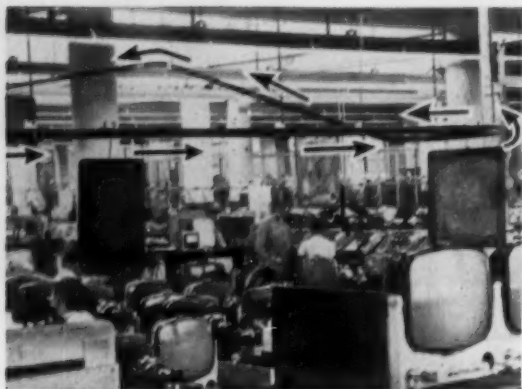
An overall review of the material handling methods currently in effect at Crouse-Hinds indicates they are the latest available—thus efficiently and effectively producing quality materials to meet competition in the market today. Not to overlook, by any means, greatly increased worker safety and comfort.

Photos courtesy The Hayward Company, The Frank G. Hough Company, Link Belt Company, Mathews Conveyor Company, The Neff & Fry Company, Otis Elevator Company, Sheppard Niles Crane & Hoist Company, The Yale & Towne Mfg. Company, U. S. Rubber Company.



ACID STORAGE TANK eliminates burns and rehandling of acid, which is now delivered by railroad car.

COST CUTTING



T-V PRODUCTION STREAMLINED

Modernization of certain production facilities at the Jersey City plant of Emerson Radio & Phonograph Company simplified and streamlined the movement of T-V dollies. Overhead movement of dollies used in assembling operations for T-V chassis was desired, since previous equipment was space-consuming. An initial installation was made for two systems, each consisting of 80 foot long and 122 foot long conveyors. Dollies, running at a speed of 12 fpm, are transferred automatically from the first to the second conveyor, running parallel, where they continue horizontally, making a 90 degree turn, then a short horizontal run. Final discharge is made onto a storage rail where the dollies remain until needed.

Circle 160 on Reader Service Card for more information

QUICK BOILER FEEDER

Weyerhaeuser Timber Company has installed an unusual traveling bridge crane which is used to feed a full week's fuel to boilers. Operating only on weekends, the crane does the work previously done by two men who always worked together as a protection against cave-ins of the ceiling-high piles of hog fuel. The crane operates in a 50 by 120 foot hog fuel storage building and is designed to break down and move the piles of hog fuel to conveyors that feed the boiler house, by means of an oversized "rake" operating from the trolley. It is 18 feet above the floor, has a 40 foot span, and will rotate through 230 degrees. A fully enclosed cab provides protection and complete visibility to the operator of the crane.



Circle 161 on Reader Service Card for more information



INSTANT WEIGHING SPEEDS ORE

Daily handling capacity has been increased substantially at Alabama State Docks in Mobile, through use of an electrical weighing method. Formerly, it was necessary to stop the crane bucket to weigh ore before it could be dumped. Now, load indications are transmitted electrically by cables from load cells to a direct reading indicator and totalizing counter in the crane operator's cab. The operator lifts the load. When the bucket stops accelerating, a pointer indicates the net weight of ore in the bucket, automatically deducting bucket weight. A foot-switch de-energizes the indicator and actuates a counter which shows the total weight handled in a shift or a day.

Circle 162 on Reader Service Card for more information

IDEAS COST CUTTING



EFFICIENT SPACE UTILIZATION

Floor space at Calnap Tanning Company, Napa, California, has been cut in half by use of a fork truck which gives access to "air-rights". Raw hides, delivered by highway trailer, are palletized upon arrival in unit loads of about 3000 pounds. The fork truck operates from the trailers and moves loaded pallets to the warehouse where they are stored three high to a height of 13'6". And, the truck is paying its way cost-wise, too, although it operates only four hours a day. Officials say it would require three men working full time to handle the same load. When operations expand, savings are expected to double, since the truck will then be utilized full time.



Circle 163 on Reader Service Card for more information



HANDLING CLAY SIMPLE AS PUTTY

Use of a tractor with a two-yard overshot loader has reduced operation and maintenance costs and speeded up production at Denver Sewer Pipe and Clay Co. The unit loads out 375 tons—or 450 yards—of clay a day in the stockpile pit. Actually it handles twice as much, since it must first mix the clays before they are dumped into pits by railroad cars on overhead ramps. The loader mixes the clays and then loads the material into trucks which carry it to crushers. It takes only two passes to load the five-yard dump trucks. The loader mixes with a minimum of movement, cutting the wear on many parts considerably. Elimination of turning has speeded up production, and three dump trucks are now filled by one unit.

Circle 164 on Reader Service Card for more information

CRANES BOOST PRODUCTION

Installation of two short-haul cranes has boosted production at Chicago Bridge & Iron Company, and proved the perfect solution to a tricky handling problem. The cranes operate on a runway only 60 feet long. On each crane's hoist is a spreader bar 25 feet long with three electric magnets attached to each bar. In the handling cycle, the crane farthest away from the main aisle of the plant picks up a heavy steel plate from a storage pile and moves it just 16 feet to a cutting table. As soon as the torches are swung away from the work, the other crane picks up the plate and moves it 16 feet out into the main aisle where an overhead traveling crane picks it up. Thus the cycle continues.



Circle 165 on Reader Service Card for more information

high-speed **Distribution Service**



TOP LEFT: "OPENING" a boxcar, truck with Bartel device makes room for clamp-truck to complete job.

ABOVE: LOADING newsprint for delivery is by ram-equipped trucks which handle two rolls at a time.

LEFT: PALLETIZING and unitizing LCL shipments has reduced labor, increased space, bettered business.

TOP RIGHT: LOADING trailer, fork truck handles palletized shipment from carrier's "depot" on dock.

MIDDLE RIGHT: SMOOTHLY coordinated, Bartel-and clamp-trucks follow each other in and out of cars.

RIGHT: STORING rolls on dock, ram-truck handles pair at a time, picking them up after release from sling.

Full utilization and coordination of industrial trucks in operations requiring fast, efficient transfers.



MEETING tight delivery schedules in a highly competitive service field calls for speed at lowest possible cost. There probably is no area in the country where competition for trucking business is higher than in metropolitan New York. And material handling in receiving, transferring, storing and delivering goods of all sorts is becoming a highly specialized technique.

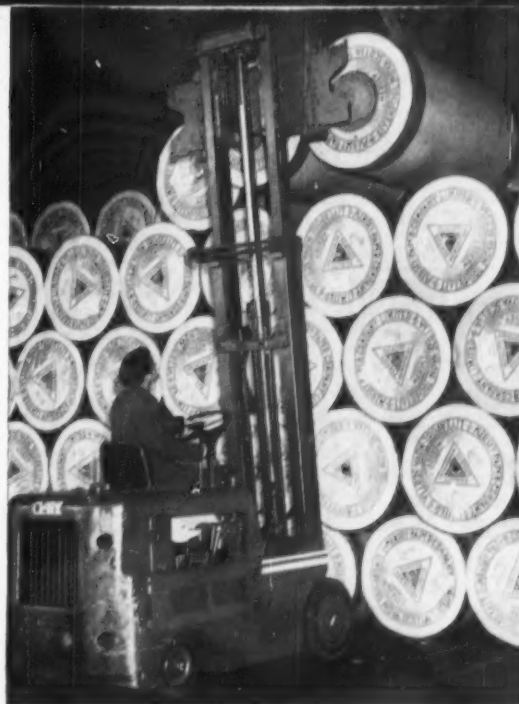
One of the most successful operations is that of the U. S. Trucking Corporation, one of New York's largest trucking and warehousing firms. Two phases of this company's activities exemplify the extent to which material handling has been mechanized. They are the handling of rolls of newsprint on railroad and ship docks in Manhattan and the handling of miscellaneous freight at company docks in Elizabeth, N. J.

Fast Handling on Docks

The firm handles and stores vast amounts of newsprint used by New York City newspapers. Because of deadlines which must be met every day, speed is a necessity during the unloading and delivery of hundreds of rolls to the various plants.

Newsprint is received both by rail and by ship. At

(Continued on page 90)



How Load-Cell Weighing Works

By Robert B. Zilius, Streeter-Amet Company

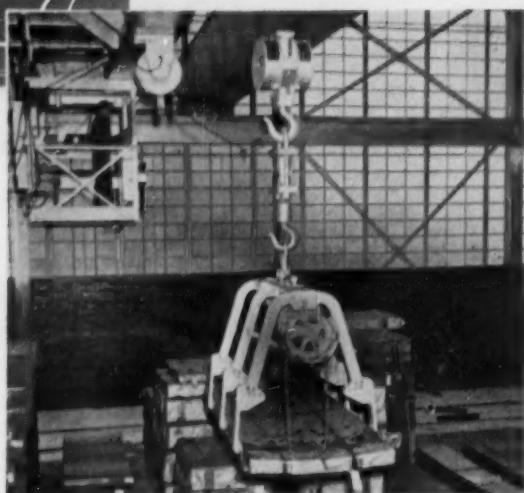


FIG. 1. Complete installation, with electronic hook, cable pulley (front of cab), recorder (behind operator).

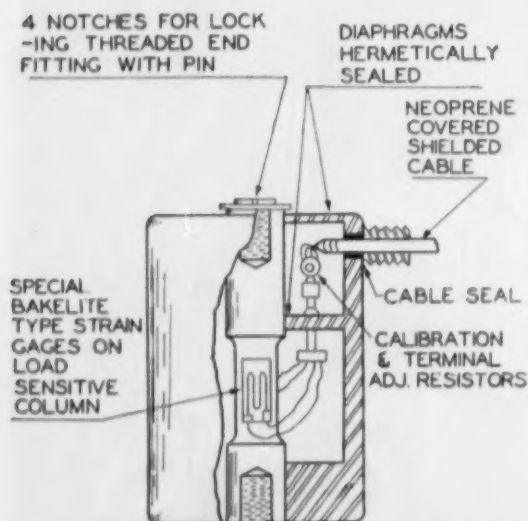


FIG. 2. Load cell designed for tension & compression.

WITH the inception of a new era—that of automatic control—industry is changing from mechanical methods to electronic methods. Industry-wide surveys show a trend towards automatic control in all phases of production, and especially in weighing operations.

In the past, weighing often interrupted the smooth flow of material handling. Today, with the ever-increasing demand for speed, accuracy, and dependability, electronic weighing and remote transmission of information maintain the continuous flow that is essential for efficiency.

Electronic weighing saves time, relieves personnel for productive work, and eliminates many human errors. The systems are easily installed—either in new plants or into existing weighing installations. Electronic weighing and telemetering systems, combined or separately, have endless possibilities for application. Telemetering is the way to transmit the information received from the weighing system to remote stations located wherever the weighing information is to be disseminated, automatically, without loss of time.

The electronic weighing system begins with a load cell (Fig. 2). Cables convey the electrical weight information from the load cell to the instrument which contains the servo system and one or more data-presentation devices—such as remote recorders and visual indicators (Fig. 11).

Figure 3 illustrates essential components of the servo system. The servo motor is a reversible, variable speed unit which responds to each change in the load cell output voltage.

After the scale is adjusted for deadload and tare load by the zero balance and tare compensator controls, and the correct range is selected, any load placed on the weighbridge will cause a corresponding increase in the output voltage or pressure from the load cells. An amplifier in the recorder steps up the output voltage many times, and then directs it to the balancing motor. As the balancing motor rotates, it mechanically adjusts a precision potentiometer in the balance bridge as well as the step cams in the printing mechanism. The potentiometer adjustment in the balancing bridge supplies an opposing voltage which is in a

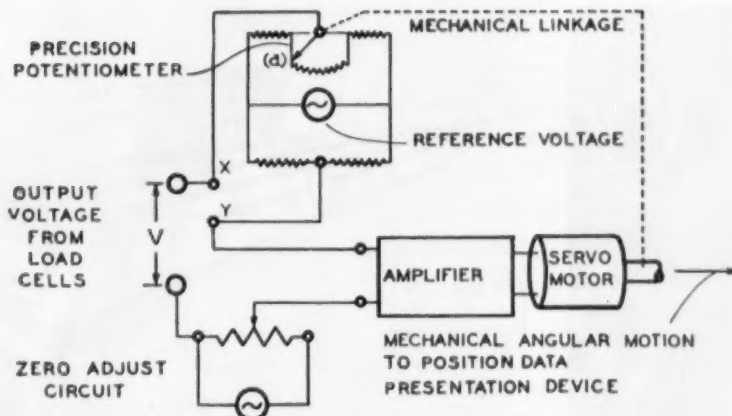


FIG. 3. Essential components of the servo system.

series with the load cell output voltage. This voltage constantly increases as long as the balancing motor continues to adjust the potentiometer. When the opposing voltage exactly equals the load cell output voltage the balancing motor stops because the resultant voltage across the amplifier input terminals has been reduced to zero. The system is once again in electrical balance with regard to the weight on the scale.

The servo system will reverse the foregoing procedure when the weight is removed. The bi-directional motor will rotate in the opposite direction until the original point of zero is reached again.

A Typical Recorder

Figure 4 shows an electronic scale recorder. It consists of a series of step cams which convert rotational information from the servo motor to corresponding digital information on the printer mechanism. The step cams rotate until they are positioned at a point proportional to the weight on the scale. When a print is desired, a switch is closed to activate the printer motor. Then a set of mechanical sensing fingers (linked to typewheels) move into position on the step cams to detect the value of the weight by means of a cam working off the printer motor. The fingers are directed into the correct step through precision correlating and step-over discs. As each finger moves into a particular stop aligned in front of it, a rack meshes with the pinion of a typewheel, which rotates a corresponding printing position. The fingers are moved to engage cams in a definite order, and, after all the typewheels are positioned in this manner, a print hammer snaps down to print the weight. The sensing fingers and typewheels are then automatically returned to waiting position by lever action. To eliminate error, a correlating and step-over mechanism operates in conjunction with the step cams before the sensing fingers move into position. This mechanism acts as a justifier for the step cams by moving them slightly forward or backward to the closest full digit after they have been initially positioned by the balancing motor. A three second response time is necessary for one complete range change.

(More on next page)



FIG. 4. Electronic scale recorder.



FIG. 5. Complete telemetering system measures, transmits and applies control information such as alarm bell.

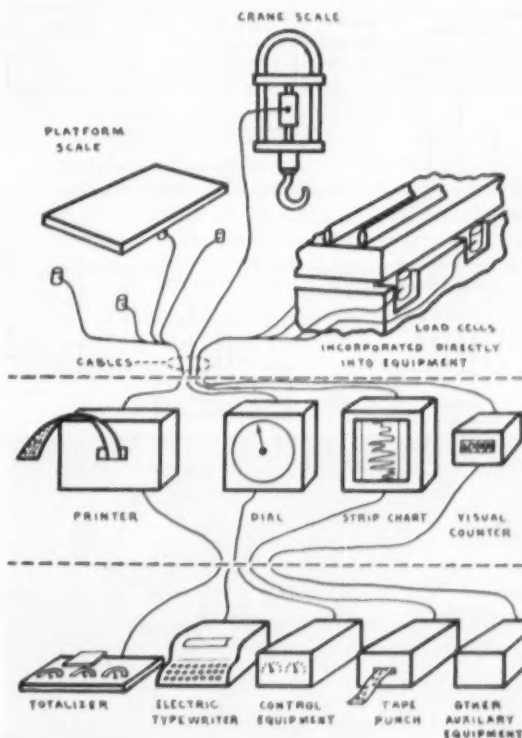


FIG. 6. Sensing devices and additional equipment may be used in basic electronic weighing systems.



FIG. 7. Electronic truck scale with a remote recorder.

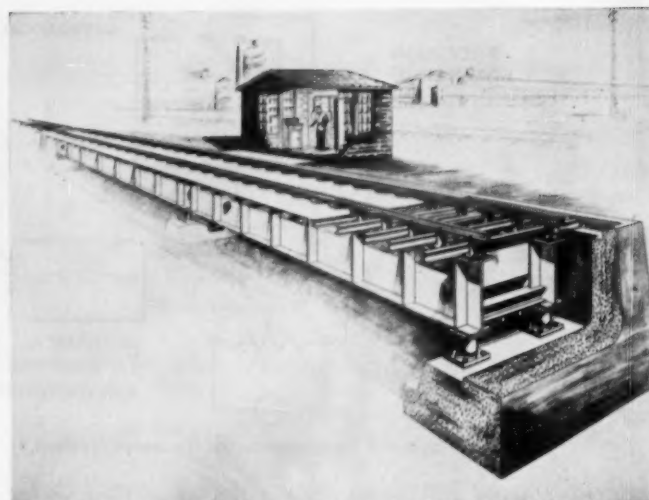


FIG. 8. Cutaway of track scale having 6 load cells.

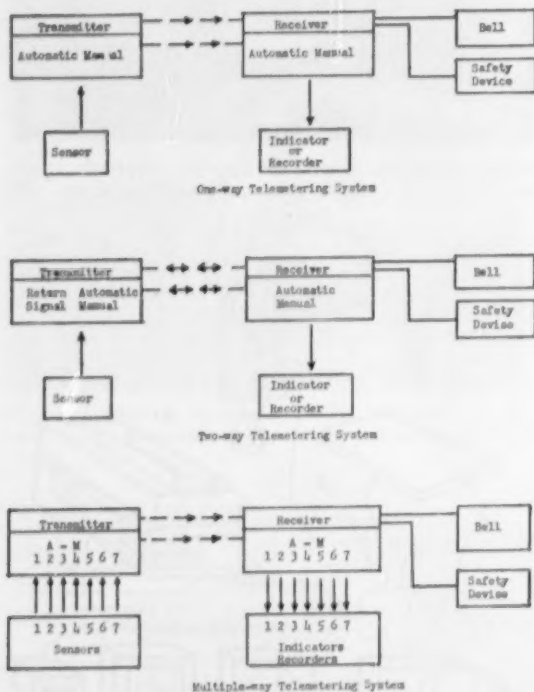


FIG. 9. Telemetering systems use common components.

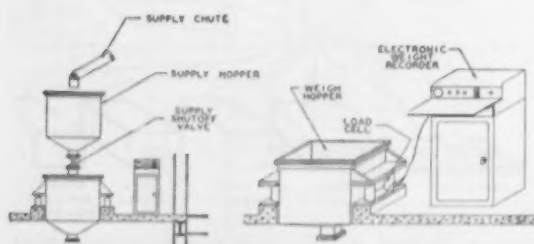


FIG. 10. Telemetering in a hopper scale installation.

This is the basic principle of the electronic weighing system. Under normal industrial conditions the accuracy of electronic weighing system is comparable with the best mechanical systems.

The three most outstanding aspects of electronic weighing are: (1) the relatively small size of the load cells; (2) the load cells react to both tension and compression, and any number can be used at one time; and (3) weight information is conveyed by electrical signal through flexible cable (Fig. 6). Thus, remote and interconnected multi-station recording is possible. This is where telemetering systems enter the picture. A wide variety of computational and control devices may be integrated into the basic electronic scale instrumentation.

Quick Dissemination of Information

Electronic weighing and its indicating instruments alone, do not fulfill the requirements of today's fast moving industry. The outstanding characteristic of the electronic weighing system is its flexibility. This makes it possible to utilize the system in such diverse weighing installations as crane scales, truck scales, track scales, platform scales, and in such applications as storage tanks, hoppers and many others.

One of the most important applications is the electronic crane scale (Fig. 1). This combines transportation and weighing of heavy materials into one operation. The crane scale consists primarily of a load cell with a lifting eye at the top and a conventional crane hook at the bottom. As illustrated, it utilizes the tension principle of operation although compression type crane hooks are available. A cable reel takes up slack in the cables as the trolley moves; a remote recorder prints the weight of each load supported. In place of a printing recorder, a visual indicator may be substituted. Almost any crane installation can be readily converted into an electronic weighing system by simply placing one of these load cells and hook assemblies on an existing crane hook and mounting the

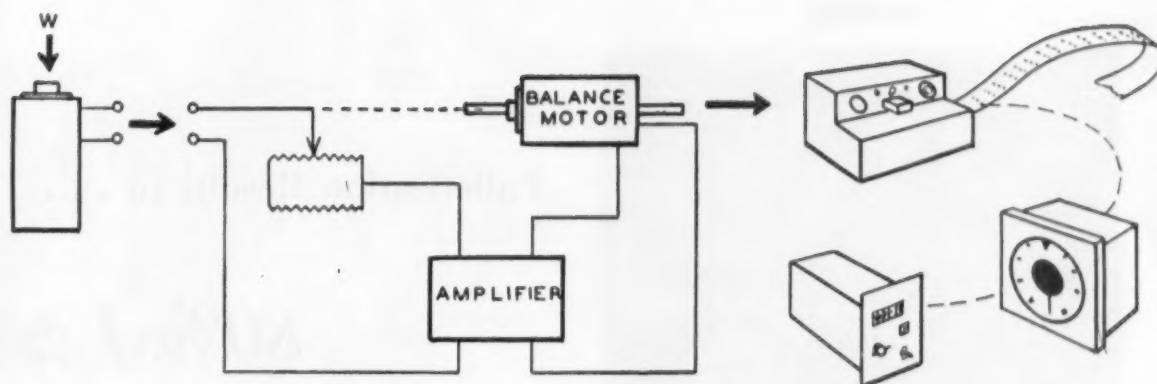


FIG. 11. Basic Elements Required for Electronic Weighing and Remote Recording

1. LOAD CELL

Stress on strain gages inside cell produce voltage proportional to that of the applied load.

2. SERVO SYSTEM

Interprets value of voltage from cell, automatically positions printing or indicating mechanisms.

3. PRINTER OR VISUAL INDICATOR

Typewheels linked to servo motor through mechanical sensing fingers record weight on tape, tickets or cards.

cable reel and recorder in the operator's cab. The cable reel pulley can be a separate unit—to be used where there is plenty of clearance in height for the crane hook—or a built-in type pulley, which is part of the hook assembly.

A truck platform scale or a track scale as shown in Figs. 7 and 8, would utilize the compression type of load cell application. The load cell is compressed when the load is placed upon the platform. From this point telemetering takes over and distributes the information received from the electronic scale.

Telemetering is a method of carrying information to remote areas. It is a method of *transmission only*. Telemetering transmits information fed into it by the electronic scale recorder. It is only as accurate as the original information it, as a system, receives. Telemetering used in conjunction with electronic weighing is completely automatic, except for the initial activation of the unit by the operator. Use of this system removes a serious cause of error—the human element. A man can mis-read figures on a dial, transpose numbers, miss a weight completely, and cause many other irregularities, creating erroneous results.

The telemetering system will not make these errors once it is set for the application.

With the addition of telemetering to the electronic weighing system it is not only possible to centralize multiple operations under one roof—by remotely transmitting information from station to station—but also to have bi-directional flow of information from multiple stations.

The telemetering system is activated automatically when the operator depresses the print button on the data-presentation device. As the servo system positions the data-presentation device, contacts are made and pulses sent to the control unit. This operates the same as a teletype converter—selecting the first contact, transmitting it, selecting the second, transmitting it, etc., until all data is transmitted in a series. (For ex-

ample, if we have a weight of 2560 pounds, the readout would select the 0, transmit it, then the 6, transmit, then the 5, etc., since only one digit is transmitted at one time.) This complete breakdown and transmission is instantaneous. A remote receiver and print unit receives the information at a point selected by management. The remote telemetering unit can be any distance from the actual weighing operation. The distance is governed by the type of carrier or radio link selected for the application.

In bi-directional telemetering, an additional receiver would be located at the weighing operation, and an additional transmitter would be required at the remote receiving end to send back to the originating point.

A complete telemetering system measures, transmits, and applies control information such as alarm bell or signal. Telemetering is available for single or multiple, monitoring or operational, metering or reporting, directional or bi-directional signal transmitting over the same pair of wires. The system consists of a transmitter control unit, transmitter, receiver, and a print control unit (Fig. 8). Other combinations develop with the application.

(Continued on page 124)

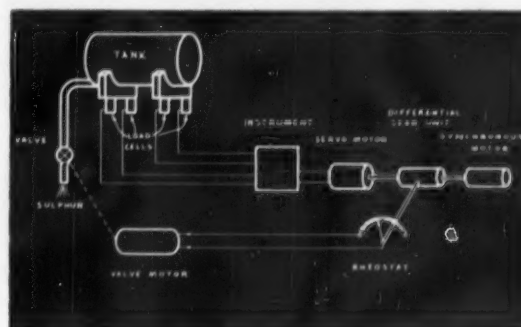
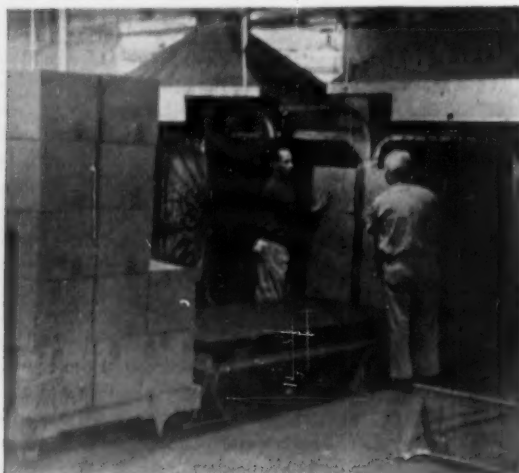


Fig. 12. Theoretical rate of flow control system.

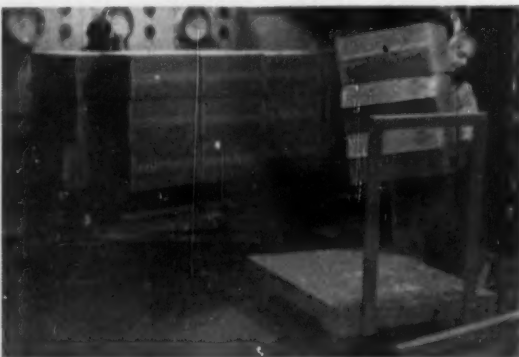
BEFORE



MANY HANDLINGS were formerly necessary in the dressings department of Bauer & Black. Filled cases, with tops open, were put on 4-wheel platform trucks.



AT STERILIZERS it was necessary to remove each case from truck and to re-stack it on movable plate running on tracks into the sterilizer.



AFTER STERILIZATION, each case is put on truck for delivery to sealing area. There, they are removed, sealed and then re-stacked on truck.

Palletization Results in . . .

80% Less

By W. H. Drews,
Material Handling Engineer
Bauer & Black
Division of the Kendall Co.

PALLETIZED handling, and the use of mechanical handling equipment, have permitted our company to reduce case goods handling 79.8% in the dressings department—between packaging lines, sterilizers, final sealing and warehousing. After computing our savings, we find that the total cost of the program (equipment, construction, etc.) will be paid for in the first 1.038 years of operation.

At the ends of three separate packaging lines, finished products are placed in corrugated shipping containers that are bottom stapled, then left open at the top to allow adequate circulation for a subsequent sterilizing operation.

The Old Method

The old method of handling finished goods involved individual movement of each case from four to seven times before it was taken from the department. Four-wheel platform trucks were used for all movement between the packaging line and sterilizers. Filled cases were placed directly onto a truck, if one was available. If no truck was ready, cases were stacked on the floor to be loaded for movement at a later time.

Necessitated Extra Man

Accumulated finished goods on trucks were assembled in an area adjacent to the sterilizers. Each sterilizer was equipped with a castored steel bed which rolled in and out on portable tracks. Cases of goods would be stacked on the beds and the loaded bed would be pushed into the sterilizer. The tracks would then be removed to permit the door to be closed. This handling and positioning of the tracks and track supports, combined with a second handling operation when

Handling

sterilizers were unloaded, made necessary an extra man during loading and unloading and increased the cycle time 20% over that actually needed for adequate sterilization.

Sterilized goods were transferred onto four-wheel platform trucks for delivery to a sealing area. Sometimes, the trucks were urgently needed elsewhere, making it necessary that cases be stacked on the floor to await sealing. It was, and still is, the practice to haul sealed cases to the warehouse by means of a trackless trailer train. Often, under the old system, when trailers were not available, cases were stacked on the floor and, of course, re-stacked onto trailers when they were available. At the warehouse, the same case-by-case onto pallets, for storage, was necessary.

Palletized Handling Provides Solution

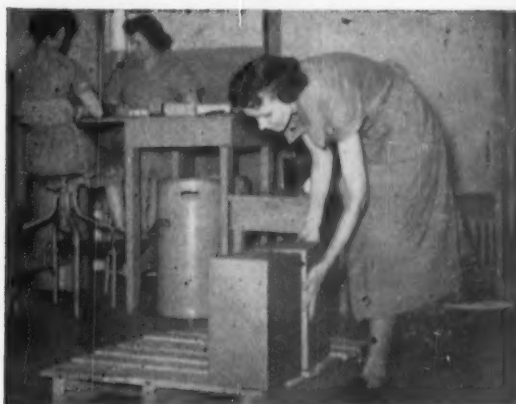
Equipment for the current method of handling includes, a supply of pallets (40" x 32" wing type which were already in use in other departments), a hand lift pallet truck and a portable elevator equipped with forks. Some modification of the sterilizers was necessary.

Now, as cases of goods come off the packaging line, they are immediately placed on pallets. If necessary, loaded pallets are moved to a temporary storage area to await sterilizing. This is done quickly and easily with the hand lift truck or the portable elevator.

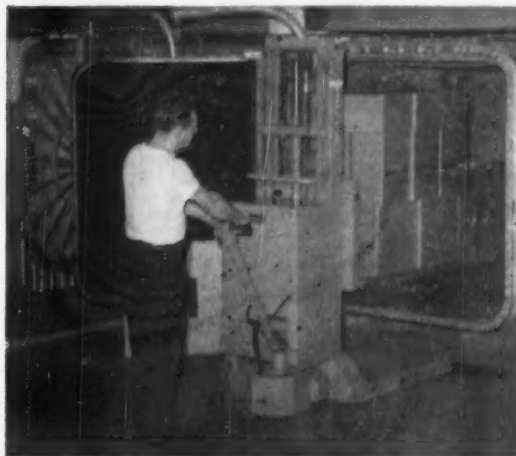
Modification of the sterilizers involved removal of the tracks and the steel beds and replacing them with roller conveyor sections. Also, the front base of each sterilizer was modified to allow room for the straddle feet of the portable elevator.

(More on next page)

AFTER



PALLETIZING of filled cases as they come off packaging line is one of the few handlings now necessary. Hand lift truck moves completed loads.



PORTABLE ELEVATOR picks up pallet loads and places them on roller conveyor section on floor of sterilizer. Chamber holds three pallet loads.



HAND LIFT TRUCK and portable elevator work as a team in loading and unloading sterilizers. Time has been reduced by approximately 20%.

PALLETIZATION

Continued

TABLE 1—OLD METHOD

Operation	Equipment Used	Time Required
Packing stand to floor	Manual	3 minutes
Floor to truck	Manual	3 minutes
Truck to temporary storage	Push 4-wheel truck	1 minute*
Temporary storage		
Storage to sterilizer	Push 4-wheel truck	15 seconds
Load sterilizer	Manual	5 minutes*
Sterilization process		
Unload sterilizer	Manual	5 minutes*
Truck to sealing area	Push 4-wheel truck	30 seconds
Unload truck	Manual	3 minutes
Seal cases (pickup, seal, set down)		
Load trailer	Manual	3 minutes
Trailer to warehouse		
Total case handling time (man hours)		37 min., 45 sec.

*Indicates time required for two men, doubled in total.

TABLE II—NEW METHOD

Operation	Equipment Used	Time Required
Packing stand to pallet	Manual	3 minutes
Pallet to temporary storage	Hand pallet truck	1 minute
Temporary storage		
Storage to sterilizer	Portable Elevator	15 seconds
Load sterilizer	Portable Elevator	1 minute
Sterilization process		
Unload sterilizer	Portable Elevator	2 minutes
Truck to sealing area	Portable Elevator	(Included in above)
Seal cases		
Load trailers	Portable Elevator	20 seconds
Trailers to warehouse		
Total pallet handling time for one man		7 min., 35 sec.
Time saved for each 30 cases		30 min., 10 sec.

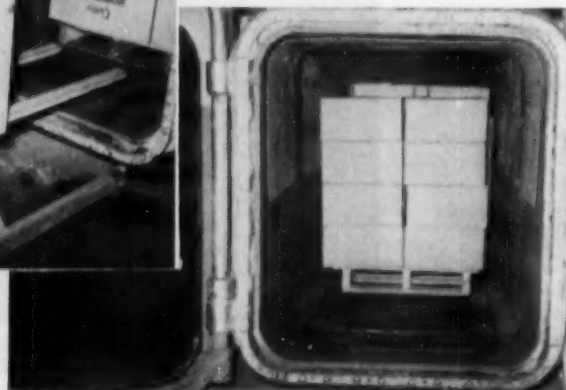
Three pallet loads are loaded into a sterilizer in 20% of the loading time previously required. Each pallet is lifted onto the roller bed and pushed back into the compartment. Unloading is accomplished in the same manner with pallet loads simply pulled onto the forks. Complete pallet-loads are taken to the sealing area and stacked.

In the sealing operation, cases are now handled only once. They are picked up, sealed and put down on another pallet. The basic handling operation, therefore, is one of transferring cases from one pallet to another. The sealing is accomplished during that single transfer. It is interesting to note that recent tests have shown that adequate sterilization can be accomplished even though all seams of a case have been sealed. Therefore, we anticipate another change in the operation. Cases will be completely sealed prior to sterilization and the present re-stacking in the sealing area will be eliminated.

No Extra Equipment Needed

Pallet loads of sealed cases are taken to the warehouse with a tractor-trailer train. Because the warehouse was already geared to pallet handling, the new system made no additional equipment necessary there.

Tables on this page indicate time savings (exclusive of warehouse savings) which have been effected by the change to palletized handling. Table I shows the time required and the method used to accomplish each of the necessary operations under the old system. (Data is based on the handling of thirty average-size cases, or one sterilizer load, by two men for most of the operations. Table II shows the same operations being done by one man and mechanical handling equipment. Capital expenditure for the new method was \$1810. Yearly savings are \$1683. Thus, the payout period is 1.038 years.



ROLLER CONVEYOR SECTION
on floor of sterilizer permits complete pallet loads to be set in place by portable elevator (inset). Front bases of sterilizers were modified to clear straddle feet.



Save 50-60% on fuel...with Yale Trucks using approved LP-Gas System

Now available in truck capacities from 2,000 to 10,000 lbs.

You pay up to 7¢ a gallon less—when you buy and store Liquefied Petroleum Gas in bulk.

Yale LP-Gas system is completely safe—approved by Underwriters' Laboratories. Sealed fuel system eliminates danger from leaks, evaporation. Safety valve automatically shuts off fuel when engine stalls or fuel line is damaged. Use permanently attached A.S.M.E. containers or removable I.C.C. containers (shown above).

Quick cold-weather starts. LP-Gas eliminates detonation, lugging and choking for smooth, quiet operation. No knocks or ping even with a 10/1 compression ratio.

More efficient while idling—when carbon forms most rapidly. LP-Gas en-

ters cylinders as a vaporized gas, burns completely. This reduces engine wear from carbon deposits, sludge, cylinder and piston ring washing, crankcase oil dilution.

Downtime cut in half—cleaner engine runs twice as long without overhaul. Oil lasts 5 to 8 times longer.

No fumes or odor. Yale LP-Gas trucks can operate around sensitive foodstuffs, in deepfreezes, warehouses and enclosed areas with complete safety.

Factory-installed LP-Gas systems are available on all new Yale Gas Trucks. And *any* Yale Gas Truck you already own can be converted by factory-trained personnel. For more details, call a Yale Representative today.



YALE*

INDUSTRIAL LIFT TRUCKS AND HOISTS

*Reg. U. S. Pat. Off.

Gas, Electric, Diesel & LP-Gas Industrial Trucks • Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

Circle No. 140 on Reader Service Card for more information

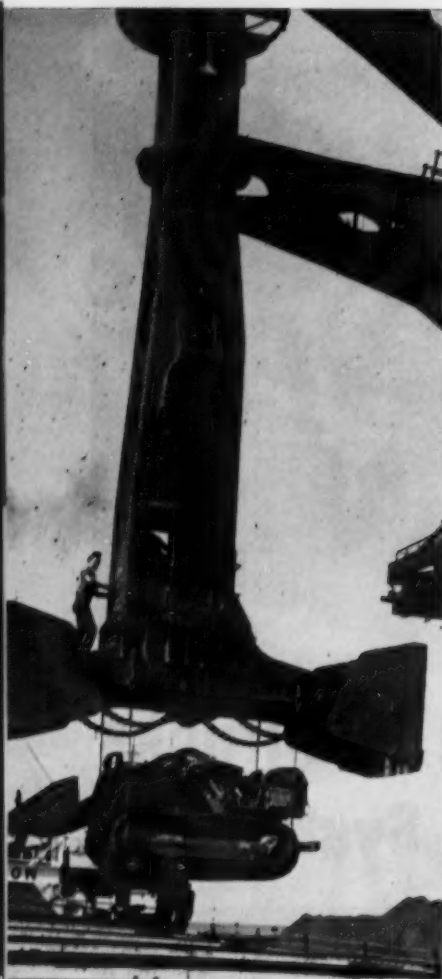
AUGUST, 1955



Write today for the FREE Brochure—

"YALE LP-GAS SYSTEMS—Installation and Operation"

**Address: The YALE & TOWNE Mfg. Co., Dept. 48
Roosevelt Boulevard, Philadelphia 15, Penna.**



DESCENDING into depths of ore carrier is front-end loader which will help unloader clean out ship.

Earth Movers

Move In...

... to help solve industry's material handling problems.

HUGE shovels, tractors, scrapers, loaders and cranes—as well as other machines generally regarded as “earth-moving equipment”—are being tagged “Material-Handlers” as they pass, in increasing numbers, through gates of industrial plants.

This trend has been growing because, a while back, industrial management began to discover what construction men already knew—that the cost of practically everything on earth had risen, excepting the cost of moving earth.

The reason for this, construction men say, has been the development of highly efficient machines and efficient ways to use them. That is why 30 million cubic yards of earth could be moved, in record time, in a single project—

the construction of the Ohio Turnpike. That is why the road-builders can move a yard of earth today for the same price he charged in 1932. And moving earth is fundamentally no different than moving the many bulk materials used in around hosts of plants.

A good example of the adaptation of “earth-movers” to “material-handling” operations can be found on the ore piles in Conneaut, Ohio. Here, Pittsburgh Conneaut, a subsidiary of U. S. Steel, unloads a year's supply of iron ore from lake carriers during warm months. Most of the ore is then hauled to the company's new stockpile area, which has access to a railroad spur. This is where the earthmovers come in.

(Continued on page 126)



HANDLING ORE within hold of ship is type machine used widely by contractors to dig basements.



PUSHING ore to outside edges of stockpile—to make room for more—is earth-mover-turned-material-handler, a crawler-type diesel tractor equipped with bulldozer. This equipment also smooths way for scrapers.



for **F. E. MYERS & BRO. CO.**
ASHLAND, OHIO
with **LORAIN CRANE METHOD**



40% SAVING Three Men Do the Entire Charging Job that Formerly Required a 5-Man Crew!

A new cupola charging method has been installed at the foundry of the F. E. Myers & Bro. Co., Ashland, Ohio—well-known manufacturer of pumps and air conditioners. The cost-cutting key is a new 10-ton Lorain Self-Propelled Crane, model SP-152, working with a new charging bucket handler. The mobile Lorain quickly runs up and down a row of bins where five different kinds of scrap and pig iron are stored. With its 39" magnet, it selects and carries some of each to the charging bucket on the scales where it is carefully measured. The Lorain handles 57,000 lbs. of such materials in a 3-hour shift. The charging crew was reduced from 5 to 3 men—and, in addition, a yard crew was released entirely for other work, as the Lorain unloads cars of pig iron, too, using the crane operator alone. But, that's only one of the savings—here's another!



YOU'LL BE DOLLARS AHEAD WITH...

95% SAVING Now, One Man Does a Scrap Loading Job in One-Fifth the Time of a 4-Man Crew!

In between melts and unloading into the storage area, the Lorain Crane makes quick runs to the machine shop . . . and loads out metal turnings to cars at a fraction of the time formerly required. It also pushes the cars, eliminating the necessity of calling for a switch-engine. "Bonus" jobs like these are profit-makers that cannot be handled by other single-purpose, material handling equipment.

● This is just one more example of Lorain Crane economy on material handling operations. Your problem may differ, but similar savings can be yours. See your Thew-Lorain Distributor for crane selection from capacities of 8 to 61 tons, on crawler and rubber-tire mountings. Call him now and start these savings soon!

THE THEW SHOVEL CO., LORAIN, OHIO

THEW LORAIN

Circle No. 125 on Reader Service Card for more information

STACKING HARDWARE

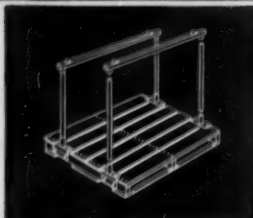


**MAKE
YOUR OWN
STACKING
PALLET
By Adding
Paltier
HARDWARE
TO YOUR
PALLET**

A TYPE FOR EVERY USE

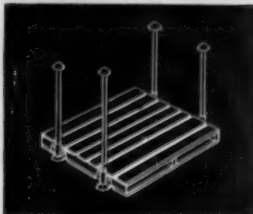
PALTEAM FOR HEAVY LOADS

A pair of tiering horses which may be assembled to any standard 3-stringer pallet. Designed for flexibility, the posts slip-fit into the socket assembly which is permanently secured to the pallet. The cross bars slip-fit over the top of the posts. Vertical openings between pallets may be changed by simply changing posts length.



CLEAR-DECK FOR MEDIUM LOADS

Is designed primarily to give user full use of pallet deck. Post and cone assembly is same as the PALTIER. Can be attached to most any pallet. Slip-fit posts and self aligning cones make for quick, sure safe stacking of loads.



ECONOMIZER FOR LIGHT LOADS

Low-priced tiering hardware of high quality for use where vertical opening does not exceed 36" and loads are not over 1500 lbs. Made with the same precision and high quality materials as other PALTIER products.

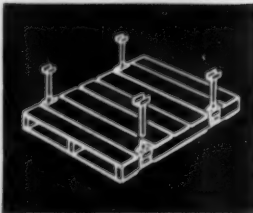
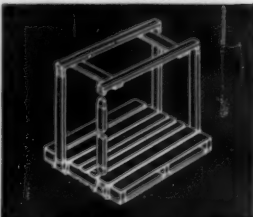


BILD-UR-OWN WITH "V" SOCKET

By using the SAFE, easy to attach "V" sockets and bevelling either 2x4's or 3x4's (depending upon your loads) together with crossbars of 2x4's you can have a SAFE, inexpensive Stacking Pallet system in operation quickly. The "V" sockets can be used on your own standard 3-stringer pallets.



This booklet tells the Paltier Story of saving storage space. . . Ask for it today!



THE PALTIER CORP.
1701 Kentucky St., Michigan City, Ind.

PRODUCTION CONTROL . . .

(Continued from page 63)

balances in their automatic assembly lines. Data is processed to assure optimum balances at the fewest number of work stations.

Plant scheduling, assembly line feeding, machine loading schedules, and labor schedules are also controlled electronically. The required outputs for every step in the flow chart, for every group of employees on every machine are available in advance. Reports are available for each department daily, weekly or at the intervals determined by the work. The distribution table covers every activity in the plant for any time during the period covered by the report.

Part of the Entire Operation

We must, indeed, see electronic data processing as part of the whole picture in the modern plant. In the building or rebuilding of the physical plant itself, the data processing required will be speeded. Calculations which assure the proper placement and purchase of machinery for most productive flow of work will be assigned to the Univac. The establishment of office procedures for accounting, payrolls, sales control, market and trend analysis, will be tasks for electronic computing. The presentation of data from which management determines what is possible in production will come from it.

The steps in production already described are only a small part of the many data processing jobs which the new devices will handle. And the controls for delivery of goods and collection of bills, the activities for the uncovering and elimination of waste, will be governed by the data that pours from them.

By now it is evident that electronic data processing is "evolutionizing" production in American industry. The plant executive can learn from history and avoid the errors in thinking which, in some ways, delayed the development of the automobile, for example.

You will remember that the first automobiles were called "horseless carriages." The early cars were made to look like carriages because that was the way people travelled. People failed to recognize that the car offered an entirely new mode of travel with unusual new possibilities for comfort, convenience and speed.

Not Only a Faster Computer

It is an error to think of the Univac as merely a faster computer. With it, industry can write its own job ticket—one which may include all the benefits it has sought from data processing.

The challenge is to the imagination of men in offices and factories, from the top brass down to the fourth and fifth echelons. The question presents itself simply as, "What facts do I want to know in order to take actions which will improve the product I make; the ease of making it; the speed of making it; and, at the same time, lower the cost of producing it?"

For engineering—for statistics—for pre-evaluations—for programming and scheduling—the solution to problems are available in minutes rather than days, in hours rather than weeks, in weeks rather than months. And they are available now.

Take a look
at a loader that
"Measures Up"
to your requirements

TRACTOMOTIVE TL-10 TRACTOLOADER

It's built as an industrial wheel loader from the ground up! Has years of HYDRAULIC TORQUE CONVERTER experience "under its bucket." Brings you the added advantages of a CLUTCH-TYPE TRANSMISSION which eliminates most gear shifting. Saves time maneuvering with short turning radius and bucket-over-drive-wheels design. Powered by the new Allis-Chalmers POWER-CRATER engine — high-octane performance on regular gasoline.

Has 1-cu-yd tip-back bucket, 63-brake hp, weighs 11,700 lb! You get added versatility with interchangeable attachments — 2-yd Light Materials Bucket, Lift Fork, Crane Hook, Backfiller Blade.

Ask your Allis-Chalmers Industrial Tractor Dealer for an on-the-job demonstration. Take a look at a loader that measures up to your requirements.



"MEASURES UP" GETTING LOAD because there is quick, positive crowding action — no slow, mushy starts. The Tractomotive Hydraulic Torque Converter Drive multiplies engine torque THREE TIMES . . . and there is the traction you need to take advantage of this extra torque with ample weight and big driving wheels. Result — heaping loads, fast!

"MEASURES UP" ON MANEUVERING Works in areas that would normally accommodate only lower capacity machines. Turning radius is only 11 ft at tip of bucket. You can go into a 10-ft bin from a 9-ft aisle! Bucket over drive wheels utilizes weight of load for greater traction . . . eases weight on rear steering wheels. Result — maneuvering time saved, production time gained!



"MEASURES UP" DELIVERING LOAD There is fast getaway, fast delivery of load with the combined advantages of the Clutch-Type Transmission and Hydraulic Torque Converter Drive. A single lever controls backward and forward operation. Highest possible travel speed in selected gear range is automatically obtained through the torque converter. Result — shifting time saved, travel time gained, more trips made!



◀ **SEE THE LATEST IN 4-WHEEL DRIVE
EXCAVATOR-LOADERS, TOO!**

Tractomotive TL-12 Tracto-Loader

A combination of advantages makes it outstanding on excavating-loading . . . has a 1 1/4-cu-yd Tip-Back Bucket, 4-Wheel Drive, Hydraulic Torque Converter Drive, Clutch-Type Transmission and Rear Wheel Power Steering. But see for yourself . . . on your job. Ask your Allis-Chalmers dealer for a demonstration.

POWER-CRATER is an Allis-Chalmers trademark.

SOLD AND SERVICED BY YOUR ALLIS-CHALMERS INDUSTRIAL TRACTOR DEALER

TRACTOMOTIVE

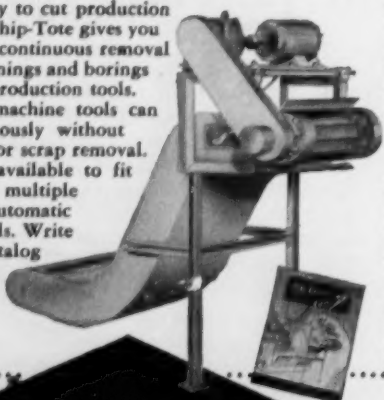
TRACTOMOTIVE CORPORATION • DEERFIELD, ILLINOIS

Circle No. 128 on Reader Service Card for more information

Tracto-Loaders • Tracto-Shovels • Side Booms and Hydraulic Rippers
for Allis-Chalmers Crawler Tractors • Loader and Shoulder Maintainer
for Allis-Chalmers "D" Motor Grader

chip-tote®

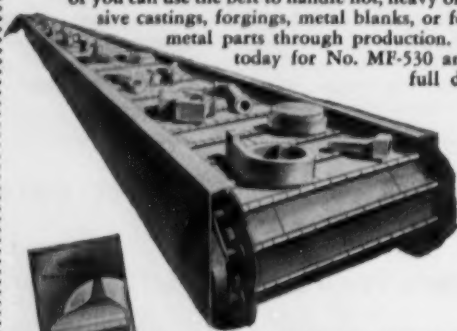
Here's a way to cut production costs! The Chip-Tote gives you "hands-off" continuous removal of chips, turnings and borings from high production tools. Automatic machine tools can run continuously without shut-down for scrap removal. Chip-Totes available to fit all standard multiple spindle or automatic machine tools. Write today for catalog No. MF-640 and see the advantages available.



**scrap
handling**

hinged steel belting

Here's a continuous belt conveyor made-up of heavy gauge steel links that are joined by high carbon steel rods. A May-Fran hinged steel belt will gather the turnings and borings from a battery of Chip-Totes or you can use the belt to handle hot, heavy or abrasive castings, forgings, metal blanks, or formed metal parts through production. Write today for No. MF-530 and get full details.



5400-MF

DESIGNERS AND ENGINEERS OF COMPLETE SCRAP HANDLING SYSTEMS

MAY-FRAN

ENGINEERING, INC.

1411 CLARKSTONE ROAD • CLEVELAND 12, OHIO

Circle No. 91 on Reader Service Card for more information

88

FORK TRUCK EFFICIENCY . . .

(Continued from page 60)

way needle-valve restrictor served this function.

The size of the small orifice in the restrictor was changed by means of an accurate screw adjustment. This action would vary the amount of restriction of oil flow in either direction of the line. With the restrictor functioning, sudden or instantaneous build-up of pressure would not pass through unless the pressure continued over a period of a few tenths of a second. In this way, sporadic fluctuations, when traveling over rough ground, (which might have falsified load-time totals) were virtually eliminated. Severe jolts which lasted over a slightly longer period of time would still appear as little dots on the disk. These infrequent dots were quickly spotted and not included in our totals.

7. Chart totalizer—to total times which were recorded by the time-motion-load recorder. Since both running and load-time records were made simultaneously on the same disk, various combinations could be obtained in totalizing. By using the collective totals of all the individual times, the truck was standing still and loaded in conjunction with the other two collective totals (running and load-times), the total time of "dead-heading" was computed. These procedures were all developed from standard instructions provided by the manufacturer of the recorder.

Accompanying this article is a photograph which illustrates the complete layout of the testing equipment placed in the manner in which the various items were connected together on the trucks. The photograph includes all units from the "T" connector through the hose, elbow, restrictor, and pressure switch, to the recorder.

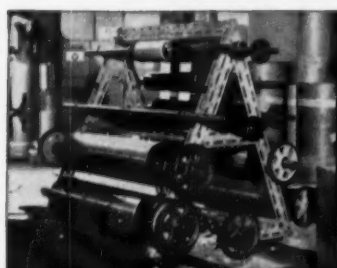
The "T" connector was fastened to the main hydraulic valve of the truck. Whenever a load was placed on the forks, the oil pressure in the system would increase a specific amount and remain at that amount until the load was removed. This action was independent of the power requirements of the vehicle, regardless of whether it was in motion or standing still. Therefore, as soon as a load was placed on the forks, the bourdon tube detected it and actuated the single-pole, double-pole switch. The electric switch, wired to the load recorder, in turn energized the relay which caused the stylus to cut the waxed disk. Upon removal of the load, the electric switch would automatically reset itself and would immediately be ready for the next load.

Procedure of Testing.

Regular tests were conducted for 70 runs on the hard rubber-tired fork truck. The procedure of each test-run consisted of the following: Every morning at 7:00, the fork truck driver wound the clock mechanism and placed a blank four-hour waxed disk in the recorder. From the moment he closed the lid of the recorder, a record was being made of the performance of the fork truck. At 11:00 A.M. the completely filled chart was removed. Again, at 12:00 Noon, a second

FLOW

how many uses for **DEXION** in your plant?



RACK



DINING TABLES



STORAGE



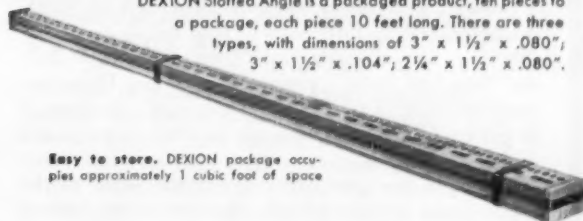
DIE RACKS



TABLE AND BINS



FILING TABLE

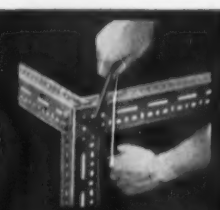


DEXION Slotted Angle is a packaged product, ten pieces to a package, each piece 10 feet long. There are three types, with dimensions of 3" x 1½" x .080"; 3" x 1½" x .104"; 2¼" x 1½" x .080".

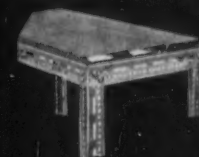
Easy to store. DEXION package occupies approximately 1 cubic foot of space



Easy to cut. One stroke of DEXION cutter saves time.



Simple to connect. Use only two wrenches.



DEXION panels. For shelving to support heavy loads.



Re-usable. Dismantle—re-build into other equipment.

Here's why you'll want DEXION Slotted Angle over any other framing material

Only your imagination limits the applications of this ingenious slotted angle framing material. Users discover that they can build whatever they need—when they need it—and build it cheaper! Easily dismantled, DEXION Slotted Angle can be reused in new ways to meet changing needs. There's no waste! And anyone who can use a wrench and a saw (or DEXION cutter) can build with this precision-made slotted angle.



GET the exciting new
DEXION IDEA BROCHURE,
which gives you full information.
Write direct to the address shown
below, Dept. 88.

DEXION DIVISION

ACME STEEL COMPANY

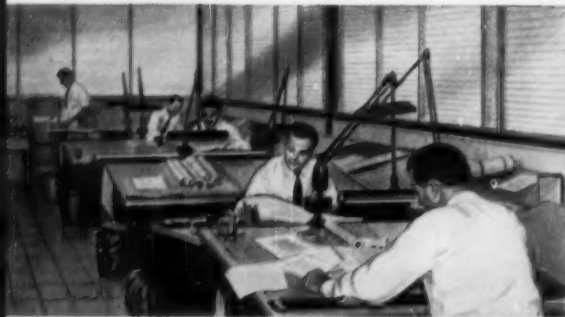
**ACME
STEEL**

2840 ARCHER AVENUE, CHICAGO 8, ILLINOIS

Circle No. 1 on Reader Service Card for more information

AUGUST, 1955

FROM IDEA . . .



TO FINISHED INSTALLATION



Service
AUTOMATED EQUIPMENT

ENGINEERED FOR YOUR SPECIFIC REQUIREMENTS

Most of America's leading manufacturers are well aware of the many advantages of automation. The question is no longer "Should we automate?"—competitive market conditions have answered that! The problem now becomes, "To what extent is it practical and profitable to automate—and how far should we go now?"

The Service Conveyor Company can help you determine the solution to this problem—a solution that will meet all your operating and cost requirements. Drawing upon its twenty-five years of experience in the field of practical automation, Service can plan, design, engineer, build and install the *right* automated facilities and equipment for your plant!

Service-engineered automation does not mean installing *all* new equipment. Service utilizes your existing facilities—supplementing them with the additional equipment required—to achieve continuous, integrated production flow. Discuss your automation plans in complete confidence with a Service engineer. Write for full details today!



SERVICE CONVEYOR CO.

7764 BRYDEN AVENUE
DETROIT 10, MICHIGAN
DEPT. 38

Engineered Automation—Ideas, Methods and Experience

Circle No. 114 on Reader Service Card for more information

90

FORK TRUCK EFFICIENCY

Continued

chart was placed in the recorder. At 3:30 P.M., it was removed.

The data on the charts was compiled and charted as the tests were being conducted. For a short period of time, some 20 test runs, a distance meter (odometer) was used to determine how far the vehicle traveled in a one-shift operation. The instrument was a simple revolution counter and was placed on the driven wheel of the truck. By counting the number of revolutions, both forward and backward, and multiplying the number by the circumference of the wheel, the distance in miles was easily calculated.

A second series of tests was made on the pneumatic tired truck. As mentioned earlier in this article, the odometer could not be used on this truck due to a difference in wheel design. A total of 55 tests were run with this truck. The data was compiled and charted for this series in the same manner as was done for the first series.

A comparison was made between the two sets of curves and charts. No attempt was made in this study to cover the mechanical efficiency of the fork truck proper; that is, with respect to engine efficiency, mechanical and hydraulic linkages, etc.

Next month, we shall describe in detail our method of computation and the results of our tests. We shall also analyze the results and discuss a number of suggested solutions to inefficiencies which our tests pointed out.

HIGH-SPEED DISTRIBUTION . . .

(Continued from page 75)

the railroad yards, freight cars are unloaded in what is possibly one of the fastest industrial truck operations in the country. The ten trucks used—in capacities from 3000 to 5000 lbs.—are equipped with clamps, ram attachments, or Bartel devices.

(The Bartel attachment consists of a steel plug which goes into the core hole of the vertical roll and pulls it back against a curved back-plate.)

From 22 to 30 boxcars are unloaded each day. Rolls are, in general, in three sizes—"long rolls", averaging 1400 lbs.; "three-quarter rolls", averaging 1050 lbs.; and "one-half rolls", averaging 700 lbs. Diameters range from 30 to 64 inches. "Long rolls" are stacked 40 per car; "one-half" rolls are bundled in two's and stacked 30 per car.

A definite flow pattern has been established on the docks—from the boxcar to the dock, from the dock to truck trailers. Unloading from boxcars requires fast, close teamwork.

A truck with Bartel device "opens" each car, removing enough rolls to allow room for a clamp-equipped truck to enter the car and remove the remainder of the rolls. (The Bartel attachment is effective at break-

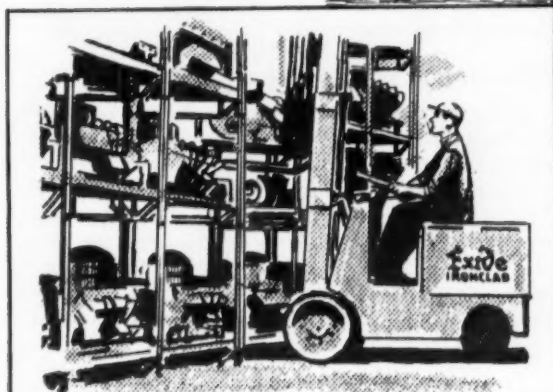
FLOW

FACTS ABOUT Exide®

IRONCLAD® INDUSTRIAL TRUCK BATTERIES

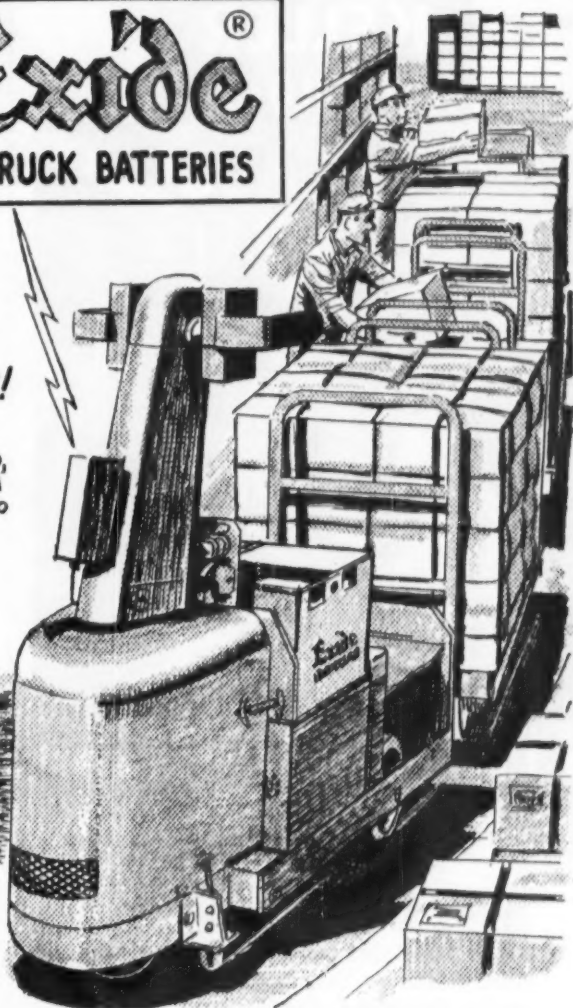
MOVE MORE MATERIALS... CHEAPER
WITH **"AUTOMATED"** TRACTORS!

NEW EXIDE-POWERED BARRETT TRACTORS, REMOTE CONTROLLED, MOVE MATERIALS THROUGH WAREHOUSES AND PRODUCTION AREAS AUTOMATICALLY... NO OPERATORS ARE NEEDED! RADIO WAVES BEAMED DOWN FROM AN OVERHEAD WIRE DO THE JOB. FOR THE AUTOMATED TRUCKS OF THE FUTURE, OR THE HIGHLY EFFICIENT ELECTRIC TRUCKS NOW IN USE, DEPENDABLE EXIDE-IRONCLADS FURNISH AMPLE POWER, DO IT FOR YEARS AT LOWEST PROVED COST FOR OPERATION, DEPRECIATION AND MAINTENANCE. EXIDES ARE ALWAYS YOUR BEST POWER BUY—**AT ANY PRICE!**



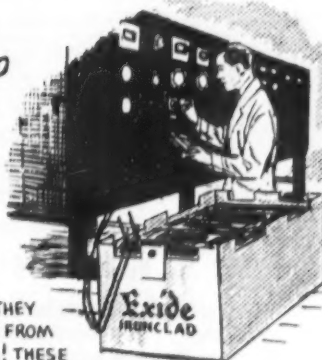
END WORK-SCHEDULING WORRIES...
IRONCLADS STAY STRONG
TO SHIFT'S END!

POWERFUL IRONCLADS HELP YOU KEEP PRODUCTION MOVING WITH UNIFORM RATE OF MATERIALS HANDLING! THEY KEEP TRUCKS WORKING FULL-SHIFT, WITH NO LAST-HOUR LET-DOWN IN TRUCK POWER OR PERFORMANCE... YOU MAKE FULL USE OF EVERY MAN AND MACHINE, GET MORE WORK DONE!



WORKED TO DEATH TO
LEARN SECRET OF
LONGER
LIFE...

LAB TESTS OF IRONCLADS AGAINST CONVENTIONAL BATTERIES SHOW THAT THEY PERFORM BETTER... HAVE FROM 20% TO 30% LONGER LIFE! THESE FACTS, DEMONSTRATED BY THOUSANDS OF BATTERY USERS, EXPLAIN WHY EXIDE-IRONCLADS ARE YOUR BEST INDUSTRIAL TRUCK BATTERY BUY—**AT ANY PRICE!**



LET EXIDE HELP SOLVE YOUR INDUSTRIAL TRUCK BATTERY PROBLEMS. ① CALL AN EXIDE SALES ENGINEER FOR FULL DETAILS. ② WRITE FOR FORM 1982, A MANUAL ON INSTALLING AND MAINTAINING MOTIVE POWER BATTERIES.

Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.
Circle No. 44 on Reader Service Card for more information

KELLER AIR HOIST



NEW

Speeds and Capacities Give Wider Range of Usefulness

Keller Air Hoists are now available with new gearing, and in link chain models to provide greater versatility of application.

MODEL	CAPACITY	SPEED	WEIGHT
86-2V20	2000 lb	19 fpm	78 lb
86-2V20L*	2000 lb	19 fpm	78 lb
86-2V10	1000 lb	35 fpm	78 lb
86-1V10	1000 lb	19 fpm	28 lb
86-1V10L*	1000 lb	19 fpm	28 lb
86-1V5A	500 lb	35 fpm	28 lb
86-1V3	300 lb	80 fpm	28 lb

*Models with link chains

KELLER AIR HOISTS HAVE THESE ADVANTAGES:

- ▶ **CANNOT BURN OUT** from overload or extended stalling
- ▶ **LIGHT WEIGHT** in relation to its capacity . . . easy to move and hang
- ▶ **LOW MAINTENANCE** . . . rugged air motor is not affected by dust or fumes
- ▶ **CONTROLLED SPEED** . . . from a creep to maximum aids spotting of load



KELLER TOOL
DIVISION OF **GARDNER-DENVER**
GRAND HAVEN, MICH.

Circle No. 75 on Reader Service Card for more information
92

HIGH-SPEED DISTRIBUTION

Continued

ing into tightly packed rolls near the door of the boxcar.) The Bartel device is used to place rolls on end in the middle of the 22-foot-wide dock. The clamp truck works along the middle of the dock, picks up each roll, turns it on its side, and deposits it along the side of the dock near the trailers. Then the ram truck picks up two rolls at once and loads them onto a trailer.

Often, the clamp truck has enough free time to unload cars itself. This is especially true when two cars, spotted door-to-door on adjacent tracks, are unloaded at the same time.

With smooth coordination, the Bartel and clamp trucks follow each other into and out of the cars with never a traffic snarl. Occasionally, two fork trucks will unload the same car. Elapsed time from the breaking of the door seal until the 40th roll is on its side, on the far side of the dock, is 20 minutes. One fork truck will empty a 40-roll car in 35 minutes.

The trailer-loading operation, with rams, is also measured in minutes. Seventeen "long rolls" are put on a trailer in six minutes. A trailer load of "one-half rolls" is ready to go in 12 minutes.

During the pick-up-and-deposit cycle, no fork truck travels more than 50 feet. The average run is 25 feet.

A skilled mechanic is on constant duty at the rail dock to give immediate repair to any fork truck that develops trouble. Each machine receives a regular check-up to spot any possible future trouble.

Unloading a Ship in a Day

In the newsprint roll operation at the ship dock the six trucks used are all of 2000 lbs. capacity and equipped with ram attachments.

From one to four ships are unloaded each week. Shiploads vary from 2000 to 10,000 rolls. Depending on the size of the cargo, ships are unloaded one hold at a time, two holds at a time, or on up to (very infrequently) five holds at once. Usually, three holds are unloaded simultaneously. Ship cranes sling two rolls at once from the hold to the pier.

A "gang", consisting of two fork trucks and their operators, is assigned to each hold being unloaded. If more than three holds are being unloaded—or there is imperative work elsewhere on the pier—a "gang" is reduced to one truck.

When the sling deposits its two rolls on the pier, a ram truck moves them either to storage or to a waiting trailer (identical to the trailers used at the boxcar operation.) If stored, the rolls are tiered 15 feet or more. Stored rolls never remain at the pier more than a few days. If not called for by the newspapers, they are fork-trucked onto trailers and stored in a warehouse.

In one hour, each "gang" loads or tiers 100 rolls, for a total of 2400 rolls per day. Thus, a small shipload can be unloaded in one day.

As at the railroad operation, an experienced mechanic is on constant duty at the pier to service fork trucks.

By using fork trucks on their two freight docks in

FLOW

BAKER "FG" GAS TRUCKS COST LESS TO OWN

EIGHT REASONS WHY...



1 LOWER INITIAL COST

—FG-40 (4000 lb.) \$4295. Other models at proportionate savings.

2 LONGER WARRANTY PERIOD

—Baker quality permits full 6 months' warranty.

3 HIGHER LIFT

—Mast design allows higher standard lift than ordinary trucks.

4 LOWER MAINTENANCE COSTS

—Designed for easier and less frequent servicing.

5 MORE MANEUVERABLE

—Short turning radius cuts aisle width, adds floor space.

6 EASIER TO OPERATE

—Greater visibility... easy-to-work controls.

7 GREATER STABILITY

—Lower center of gravity... higher "stability factor" ratio.

8 BETTER BRAKING

—Full floating, self-equalizing, self-energizing brakes.

Baker

handling equipment

Write for descriptive literature.

THE BAKER-RAULANG COMPANY

1219 WEST 80th STREET • CLEVELAND 2, OHIO

A Subsidiary of Otis Elevator Co.

507

Circle No. 18 on Reader Service Card for more information

AUGUST, 1955

93

HIGH-SPEED DISTRIBUTION

Continued

Elizabeth, U. S. Trucking has gained three clear-cut advantages: (1) They have been able to re-assign 66 2/3 percent of this force; (2) they have at least doubled their storage space and, at the same time, increased their working space on narrow docks; and (3) most important, they have increased business because independent truckers can empty their trucks faster at U. S. Trucking's docks than at competitors.

To get these results, the firm has adopted a system of palletizing that minimizes freight handling. This system has replaced a method of handling all freight on carts.

The company divided its shipping operations between two docks: one devoted to Eastbound freight, the other handling only Westbound freight.

Since the Eastbound dock is exceptionally narrow, space here is at a premium. Because of this, U. S. Trucking uses "stand up" trucks on this dock. These trucks, fitted with triple extension lifts, make it possible for the company to handle large amounts of freight, yet keep the docks relatively free of clutter. Though they extend to stack pallets as high as 90 inches, the 63-inch masts are low enough to run inside trailers.

To start the operation, fork truck operators come in 30 minutes before the rest of the crew. They stack pallets at the "spots" where the incoming freight car doors are spotted.

One man segregates the carload by destination and places it on pallets. Although he may start out with five or six pallets on the dock, once inside the car door only two pallets are loaded at a time.

When the pallet is loaded, it is "flagged" for destination. A fork truck operator then puts it on the proper trailer, where it is unloaded. In this way actual handling of freight has been cut in half.

Operations on the Westbound dock are similar to those in the Eastbound. The company accepts freight for the West from independent trucks at 19 doors.

The driver of an independent truck with freight for the West backs up to the dock, pulls a pallet down from the stack near the "spot", and puts his freight on it. If the driver has a big load, a checker comes over to check the load as the driver segregates it. If the load is small, the driver unloads it first, then calls a checker to his truck.

It is this system that makes it possible for U. S. Trucking to unload independents faster than competitive docks in the Elizabeth area. Since the truck driver sorts his own load without waiting for the dock foreman to send a crew to him, he can get in and out in a hurry.

The fork trucks pick up the freight from these trucks and carry it to one of 15 freight cars or 6 longhaul trailers spotted at the dock. Three stowers work these five lines of freight cars and six trailers. Each stower works alone. He calls for help if he finds he is falling behind.

For photos and data, FLOW thanks Clark Equipment Co. and Lamson Mobilift Corp.

**"OUR HEILOADER ELEVATING TAILGATES
eliminate the expense of helpers..."**

**Says R. L. PERRY, Secretary
CENTRAL TRUCK LINES, INC.
Tampa, Florida**

Here are some other reasons why Central Truck Lines consider Heiloaders an important addition to their material handling equipment...

- "Heiloaders are real time-savers in making pick-ups and deliveries, especially with our shippers and consignees who do not have loading platforms."
- "A definite advantage of the Heiloader is the automatic raising to a vertical position as a tailgate."
- "Our Maintenance Department reports durability and maintenance costs have been entirely satisfactory."

HEILOADERS can cut pick-up and delivery costs by 50% on your jobs! One man replaces two or three for loading or unloading heavy, bulky merchandise, in less than half the time. There are no delays waiting your turn at loading platforms. Trucks can make more deliveries per day. Maintenance costs are low... only one hydraulic cylinder required to lower and raise the platform, open and close it automatically as a tailgate. Two models available... one for loads up to 2000 lbs., the other for loads up to 4000 lbs. Find out how you can save money... ask your Heil distributor today for details about both models.



THE HEIL co.

DEPT. 6985, 3069 W. MONTANA ST., MILWAUKEE 1, WIS.

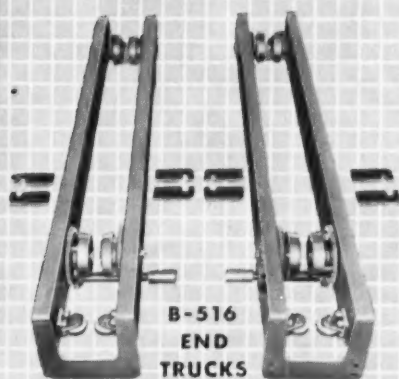
Factories: Milwaukee, Wis.—Hillsdale, N. J.—Lancaster, Pa.

Heil Sales Offices: New York, Union, N. J., Atlanta, Cleveland, Milwaukee, Chicago, Kansas City, Denver, Dallas, Los Angeles, Seattle, Lancaster, Pa.

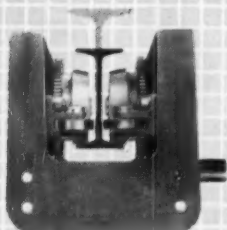
Circle No. 66 on Reader Service Card for more information

ACCO
products

These Simple Steps Show You How to Save Money on Cranes



**B-516
END
TRUCKS**



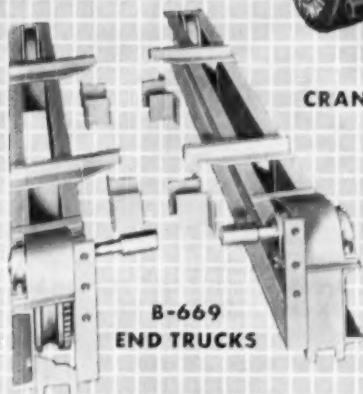
GUIDE WHEELS



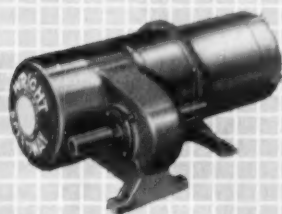
**B-514
END TRUCKS**



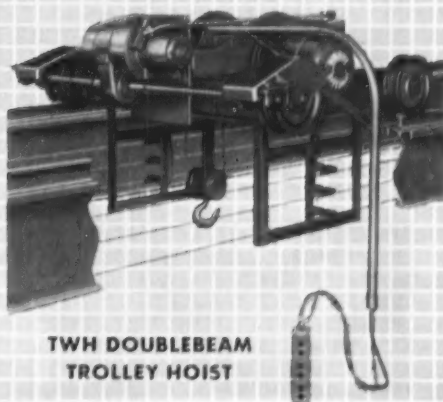
END VIEW



**B-669
END TRUCKS**



CRANE DRIVE UNIT



**TWH DOUBLEBEAM
TROLLEY HOIST**

When you are confronted by a material handling problem, and the decision is to **BUY** overhead equipment, either monorail or cranes may be the solution. **WRIGHT** offers a wide variety of quality hoists, some being hand and others **ELECTRIC**. For production purposes hand hoists are now being replaced by **HOISTS** powered by electricity. For the very latest design see the B-516 **END TRUCKS**. Flangeless wheels permit travel on various beam sizes, **AND** thrust rollers, bearing against the eye beam webs prevent skewing. **CRANE DRIVES** are equipped with a new design of solenoid "drag" brake and are furnished in a wide variety of travel speeds. To save freight charges . . . **BUILD** cranes locally with **WRIGHT's** soundly engineered crane components. **MODERN** construction and manufacture call for Timken Tapered Bearings in **MOTOR DRIVEN** trucks and either single speed fluid drive or variable speed **CRANES**.

We will be glad to send you literature carrying full information on any or all of the following WRIGHT Crane components:

Hand Traveling Cranes—top running single bridge Bulletin #DH-468

" " " —underhung Bulletin #DH-348A

Motor Driven Cranes—underhung single bridge Bulletin #227

" " " —top running Bulletins #DH-448 or #DH-449

WRITE OUR YORK, PA., OFFICE

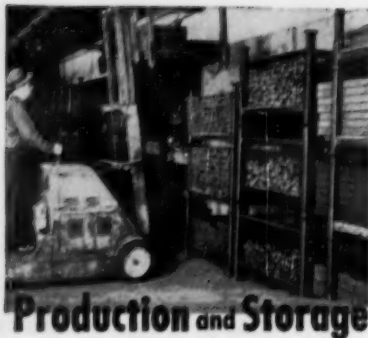
ACCO



**Wright Hoist Division
AMERICAN CHAIN & CABLE**

York, Pa., Atlanta, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

**for
Better
Value**



Costs cut with **ERCO** **STAK-PAL**

system of Material Handling

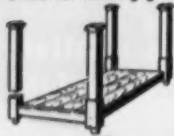
STAK-PAL tubular stacking racks have been designed to handle quickly and efficiently your every storage need.

Stacking operations are safer, easier and trouble-free with removable corner posts or end frames.

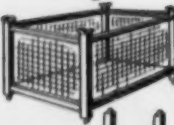
QUANTITY PRODUCTION, STANDARD SIZES and our own SEAMLESS TUBE MILL assure you of a low cost product, combined with quality workmanship. All STAK-PAL tubing, square or rectangular has a minimum 11 gauge wall for rugged strength and almost complete elimination of maintenance costs. Specials made to specifications.

LET US PROVE THESE FACTS

Write for catalog giving complete information.



STAK-PAL
Three styles Type A with one center support in the basic for two-way entry. Type B two angle supports. Type C designed with six angle center supports, both of latter are four way entry.



STAK-BOX
Type X bin box and Type H bin box racks are for use with forks at least as long as the over all width of the racks and have angle supports similar to type B standard STAK-PAL racks.



COIL RACK
With the SK type coil rack considerable time is saved in handling and stacking.



END FRAME RACK
Type F Stak-Pal with removable end or side frames are desirable for handling of parts shorter than the space between the corner posts or for any parts requiring support between posts.

C. E. ROBINSON CO.



Manufacturers of
Metal Products

222 COLBURN AVENUE
JOLIET, ILLINOIS

Circle No. 110 on Reader Service Card
96

Committee to Promote Interest in Material Handling Education

HOW to make the study of Material Handling more attractive to Engineering students was the principal project on the agenda of the College-Industry Committee on Material Handling Education, meeting at Wayne University, Detroit, in June.

The need for positive action in this direction was stressed by Prof. James M. Apple, of Michigan State University. In a review of statistics on 1954 college graduates awarded bachelor degrees, he said, only 22,236 were Engineering students. Of these, a mere 1,300 were graduated in Industrial Engineering. Some had studied Material Handling rather thoroughly; others got only a smattering of learning in this field.

It was the consensus of the meeting that manufacturers and users of Material Handling equipment, along with educators, must increase efforts to make clear to students—and to colleges—the rich opportunities in this field for graduate engineers. The present trickle of college-trained Material Handling Engineers into industry, it was pointed out, fails utterly to measure up to the equipment sales volume of more than a billion dollars annually.

While Material Handling remains something of a "step-child", where college curricula are concerned, the Committee noted with pride and encouragement that thousands of men—and women—from all job levels in industry up through management, are devoting many of their non-working hours to Ma-

terial Handling study on the college plane, through services provided by evening and extension schools.

Under its rotation program, the College-Industry Committee added three new members—John G. Bucuss, President, Acme Steel Products Division, Acme Steel Company; O. E. Johnson, Assistant Plant Manager, Ford Motor Company, Standard Transmission and Radiator Plant, and James R. Bright, Harvard University Graduate School. These new members represent manufacturer, user and educator, respectively. Mr. Bucuss is a past president of the Material Handling Institute.

Collection, captioning and classifying as to type and function of more than 600 picture slides of material handling equipment, was reported by Prof. Byron W. Saunders, Committee Chairman and Associate Professor of Industrial Engineering at Cornell University. From these slides, strip films will be made for use by some 125 colleges and/or universities as teaching aids in material handling courses.

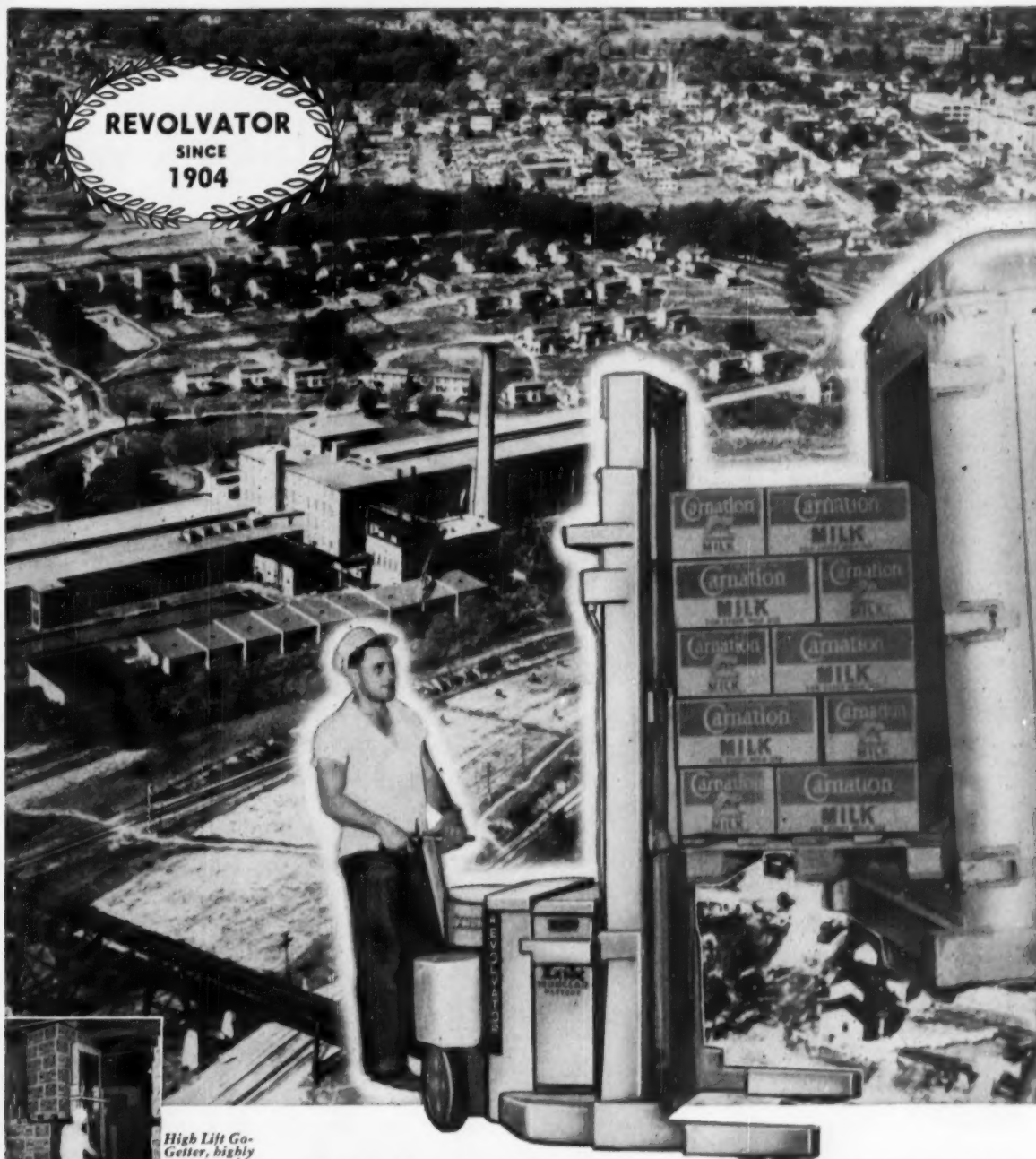
The Committee set up a new Task Group, with E. W. McCaul, vice-president of the Jervis B. Webb Company as chairman, to gather films from material handling equipment manufacturers—with the view to turning out a second 16mm composite motion picture. This project was undertaken as a result of the reported success of the Committee's first composite film, "Powered Industrial Trucks."



Committee members left to right are: Dr. Spencer A. Larsen, Howard M. Palmer, Harold T. Armine, James Bright, Norman Shikes, A. K. Strong, Byron W. Saunders, John G. Bucuss, D. H. Bitney, L. W. Shea, E. W. McCaul, James M. Apple and Irving M. Footlik.

FLOW

REVOLVATOR
SINCE
1904



High Lift Go-Getter, highly maneuverable, a favorite of food producers, wherever narrow aisles and high stacking is required.



The same High Lift Go-Getter engaged in transporting goods from the warehousing operation to the shipping point—a real brute for work.

REVOLVATOR GO-GETTER LIFT TRUCKS

You Benefit By Over 50 Years of Diversified Experience

Thruout Industry Revolvator Go-Getter Lift Trucks have been used to solve a great range of materials handling problems. For manufacturers of heavy machinery—where area temperatures are high and loads are maximum; for packers of frozen foods with temperatures ranging from seasonally atmospheric to far below zero, Go-Getter Lift Trucks have proved their worth. No matter how different you may feel your requirements are, there is a standardized Revolvator Go-Getter ready to perform your most specialized requirements.

The quiet, smooth, powerful operation;

the easy maneuverability; the freedom from heavy maintenance; the overall simplicity of construction of these Revolvator Go-Getters have made the name Revolvator synonymous with peak efficiency in materials handling.

Today write for full information.

REVOLVATOR CO.

8739 TONNELE AVE., NORTH BERGEN, N. J.

Circle No. 108 on Reader Service Card for more information

INDUSTRIES EVERYWHERE...

solve shipping problems with

versatile, low-cost

Continental fibre drums



PAYOFFPAK® untangles some knotty problems in wire processing.

By automatically packaging wire as it is drawn, Payoffpak has revolutionized the handling of wire! Continental's Payoffpak fibre containers put an end to the many costly operations involved in producing split coils . . . eliminates reels, manual handling and protects against dirt, rust, corrosion and snagging. What's more, light-weight Payoffpak can hold 600 lbs. of wire. High stacking strength means you can use maximum storage space, too.

Payoffpak is just one of many fibre containers in the Continental line. Name any product — dry chemicals, transformers, powdered foods — and Continental has a fibre drum that serves the purpose. So check into Continental's Leverpak, Fiberpak, Stapak, and its other fibre containers. You'll lower your shipping and operating costs, too. Call us soon.

Available in any size, style or design



**CONTINENTAL
CAN COMPANY**

FIBRE DRUM DIVISION • VAN WERT, OHIO

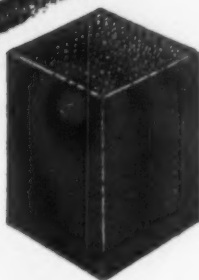
New York • Philadelphia • Pittsburgh • Tonawanda • Cleveland • Chicago
Atlanta • St. Louis • San Francisco • Los Angeles • Eau Claire • Boston

Circle No. 143 on Reader Service Card for more information

PACKAGING AND SHIPPING SECTION

TABLE OF CONTENTS

Efficient Handling of Small Shipments	102
High-Speed Stapling Operation	106
Automatic Bundle Tying	108
Heavy but Fragile	110
Packaging & Shipping Idea of the Month . . .	112



An Easy Index to This Month's Advertisers

Are you looking for a particular type of packaging and shipping equipment? Listed below are advertisers according to type of product they are advertising in this issue. We have attempted to make your job a little easier by listing them as often as possible. To use this index, find the type

of product in which you are interested . . . turn to the advertisers listed under that product . . . circle the correct numbers on the reader service card, mail it, and you'll get complete information in a jiffy.

BULKHEADING

Evans Products Co.	113
-------------------------	-----

CONTAINERS

Bigelow Garvey Lumber Co.	124
Gaylord Container Corp.	107
General Box Co.	123

CUSHIONING AND BARRIER MATERIALS

Armour & Co.	109
Kimberly-Clark Corp.	117
Nichols Paper Products Co.	114

GLUES, TAPE AND TAPE DISPENSING EQUIPMENT

American Sisalkraft Corp.	119
Derby Sealers, Inc.	114
Hudson Pulp & Paper Co.	125
Mid-States Gummed Paper Co.	116, 118
Minnesota Mining and Manufacturing Co.	101

MARKING AND STENCILING EQUIPMENT

Diagraph Bradley Industries, Inc.	120
Adolph Gottscho, Inc.	116
Weber Addressing Machine Co.	120

PACKAGING MACHINERY

ABC Packaging Machine Corp.	122
Pak-Rapid Inc.	122

STRAPPING, STAPLING AND STITCHING EQUIPMENT

Dave Fischbein Co.	118
Gerrard Steel Strapping Div., U.S. Steel Corp.	105
Signode Steel Strapping Co.	111
The Stanley Works, Strapping Div.	115
Union Special Machine Co.	114

World's Strongest Tape?

Even "Hard-Boiled" Haggerty can't break it!



"SCOTCH" Brand Filament Tape—super-strong, amazingly shock resistant. Thousands of filaments embedded in the pressure-sensitive adhesive give it up to 500 lbs. tensile strength per inch of tape width. New exclusive "mirror-surface" adhesive gives 100% tape contact; *puts all the tape strength to work.* We'll be glad to send at your request complete information on how you can use it for materials handling and heavy duty packaging.

There are more than
300 Pressure-Sensitive Tapes

for Industry trademarked...

REG. U.S. PAT. OFF.

SCOTCH

BRAND



Look what you can do with it!



BAND odd sizes and shapes of metal stock into bundles. "SCOTCH" Brand Filament Tape secures such bundles weighing up to 800 lbs.; does it quickly, cheaply, safely.



PALLETIZE loads to prevent movement and shifting in handling and transit. "SCOTCH" Brand Filament Tape is easy to apply; easy to dispose of after removal.



PROTECT enamel or stainless steel; fasten covers, hold doors closed with "SCOTCH" Brand Filament Tape. Will not mar surfaces; strips off clean.



FREE BOOKLET: "Heavy Packaging and Materials Handling"—valuable aid to using "SCOTCH" Brand Filament Tapes. Just write on your letterhead to Dept. G-85.

The term "SCOTCH" is a registered trademark of Minnesota Mining and Mfg. Co., St. Paul 6, Minn. Export Sales Office: 99 Park Ave., New York 16, N.Y. In Canada: P.O. Box 757, London, Ontario.

Circle No. 96 on Reader Service Card for more information



Shipper's Code

for motor carrier transportation

We will:

1. Give carriers a delivery schedule so our receiving docks will be clear when they arrive.
2. Set up a shipping and pickup schedule so that carriers will not have to wait.
3. Schedule some carriers for early pickup, especially for large shipments.
4. Advise carriers well in advance of our volume of shipments and any special equipment we need.
5. Pack shipments in sizes for easy handling.
6. Mark packages clearly to simplify checking.
7. Assemble shipments for each carrier in one area to speed loading.
8. Provide carriers with clear, complete copies of bills of lading.
9. Have bills of lading ready when the driver calls.
10. Provide good handling equipment and dock boards.
11. Load shipments in a special sequence if carrier requests.
12. Give the driver a hand when he needs it.

Recommendations for

Efficient Handling of Small Shipments



by Neil Drake, partner,
Drake, Startzman,
Sheahan and Barclay

HIGH costs of small-lot shipments pose a problem of great importance to shippers and carriers alike. Each year, factories and warehouses throughout the country ship more and more freight, but they ship in smaller and smaller lots. (More than half the shipments a motor carrier handles weigh less than 150 pounds, and give him only seven percent of his weight.) It is clearly seen that economies effected in smaller shipments can result in substantial cuts in over-all distribution costs.

The small-shipment problem can be capsuled into a few figures by a comparison of two motor-freight shipments, one of 100 pounds and the other of 1000 pounds.

Dock costs (man-minutes of direct and indirect labor for handling across two docks) add up to 18 man-minutes for the 100-pound shipment and 32 man-minutes for the 1000-pound shipment;

Pickup and delivery costs (man-minutes of driver time for picking up and delivering) are 20 man-minutes for the 100 pounds and 33 man-minutes for the 1000 pounds;

Clerical work consumes the same amount of time for both size shipments.

From the above data, it can be seen that a carrier

can handle 900 per cent more weight with only 78 per cent more dock cost, 65 per cent more pickup and delivery cost, and no additional billing cost. The big area for cost savings, then, is certainly in the 100-pound group.

What Can the Shipper Do?

Studies indicate that less-than-truckload pickup and delivery costs could be reduced by as much as 20 percent if the "lost time" caused by delays at shipping and receiving docks were eliminated. Cooperation between shippers and carriers and improvements in facilities at shippers' docks would go far toward streamlining small-lot truck shipments.

Most contacts a carrier has with a shipper are through the person responsible for designating carriers for specific shipments. He may be a traffic manager with no other major functions, or he may perform other duties, such as purchasing. It behooves the shipper to appoint a traffic manager who is generally cost conscious and who has a background in rate structure and carrier operations. There is a growing trend to organize all traffic functions under one responsibility, perhaps "Director of Physical Distribution". With authority thus centralized, problems and bottlenecks can be dealt with immediately and effectively.

Here are 12 ways in which shippers and consignees can help to insure more efficiency in less-than-truckload shipping:

1. Plan and schedule receiving and shipping operations.

Try to imagine what manufacturing operations would be like without planning, scheduling, or production control. The confusion and waste which would result would be appalling, yet, such is the condition on a high percentage of receiving and shipping docks. Few of them are planned around tight schedules—labor costs are high, congestion leads to slow-downs and accidents, and errors are invited.

If shippers would schedule shipping over relatively long periods, carriers could make better use of pickup

This article and the "Shipper's Code" accompanying it are taken from findings and recommendations of an extensive survey made by Drake, Startzman, Sheahan and Barclay, distribution and material handling consultants. The survey was made for the Transportation Committee on Practices and Procedures which is under the sponsorship of the National Traffic Committee and two Conferences of the American Trucking Association, Inc.—namely, the Regular Common Carrier Conference and the Common Carrier Conference, Irregular Route. Complete findings and recommendations have been published in four volumes and are available from the Transportation Committee on Practices and Procedures.

and delivery fleets; bring outbound freight to their docks earlier, and reduce costly surges. Shippers would get better productivity in the shipping department and better turnover of space and facilities.

Often, plants prepare and assemble orders in the sequence they are received from the mail room or from order editors. The theory seems to be that orders should be taken on a first-come-first-served basis, except for emergency orders. Shipments are prepared and assembled in the shipping room without regard for the carrier who is to move them to the market. Therefore, no carrier's load is complete until the middle or late afternoon. Assume that a shipper's order-preparation and shipping operation is geared to handle 100 orders a day and he is using 10 carriers. Not until every order is prepared and assembled can any carrier be called in to make a pickup.

However, the shipper can establish positive control over the sequence in which orders are prepared. By first routing orders and then sorting by carrier, he can process shipments for one carrier by, let us say, 11:00, the second carrier by 1:00, the third by 1:45, fourth 2:30, etc. This procedure will allow him to schedule the first carrier pickup by 11:00, the second at 1:00, etc.

This would benefit the carrier because the dispatcher can schedule his operations, use the slack period in the middle of the day for productive work, bring some of the outbound freight to the terminal earlier, level his peak, and get outbound line-haul units on the road earlier.

Benefits to the shipper are many: He can turn over the space in his shipping room several times during the day, truck backup spots will not be crowded, the flow through the shipping room will be orderly, and the overtime and errors encountered in that last-minute, frantic loading of trucks can be eliminated. Furthermore, prompt delivery to customers will result in added good will. Similar benefits will result in receiving operations.

2. Review handling methods.

In recent years, many companies have called upon industrial engineers to make studies of receiving and shipping methods. Improved layouts, better handling, tighter control, better checking and a reduction in paperwork usually result.

3. Take a critical look at facilities.

Overall plant operations are greatly affected by receiving and shipping facilities. Too few vehicle backup spots results in considerable downtime for receiving and shipping personnel.

The importance of adequate truck-loading facilities is illustrated by a new 100,000 square-foot manufacturing plant producing a high-volume consumer item. Planners of the facility provided for only one truck spot, but the high-volume production of the plant re-

quired a peak loading of about 15 trucks a day. As a result of poor planning, the company pays enough in overtime to finance the cost of thousands of square feet of construction.

Many plants suffer from lack of operating space in which to sort inbound materials or assemble shipments. Space requirements for receiving and shipping can and should be computed the same way as space requirements for production and warehousing.

4. Lay out space for uncongested flow.

Material flow is all-important in receiving and shipping. Good flow is dependent upon layout of aisles. Aisle discipline—that is, respect for the planned aisle—is usually much more lax in receiving and shipping than in production departments. The direction in which aisles run is important. Ordinarily, aisles are arranged parallel to the truck dock and feed through a main aisle, which becomes a built-in bottleneck during peak periods. In the best layouts, the aisle runs perpendicular to the dock edge, with one aisle centered on every two truck spots.

5. Segregate shipments by carrier.

A common error is to pile all shipments together on a dock, then give bills of lading to pickup drivers and have them dig out freight. It is no more trouble for the shipper to keep each carrier's freight separate. By such a simple precaution, he will insure maximum speed of loading, minimum errors, and improved turnover of space on his dock.

6. Create handleable packages.

Because of variations in types of handling equipment available at transfer points and destinations, it is usually advisable to keep packages down to the weight one man can handle.

7. Mark Legibly.

A spot check of shippers in one city disclosed that 75 per cent of all companies were using substandard marking. Markings which are not clear, accurate or complete invite delay, misrouting and loss.

8. Prepare bills legibly and have them ready.

In this day of mechanization, surprising numbers of bills of lading are handwritten. Handwritten bills, of course are not necessarily illegible. The primary cause of illegibility is found to be poor overworked carbon paper. The results are additional costs in checking and billing, as well as a high percentage of errors.

9. Notify the carrier of requirements.

A shipper with freight to be picked up should call the carrier as early as possible and tell what the freight

(Continued on page 118)

USS Gerrard ties ANYTHING you've ever seen



The bricks are loaded onto a "jig" in lots of 500. The corrugated covers are slipped into place, and the unit is securely reinforced with USS Gerrard Round Steel Strapping.



Strapping a 500-brick unit, using the USS Gerrard Model K machine and 12-gauge USS Gerrard Round Steel Strapping.

"USS Gerrard Steel Strapping enables us to balance our workload, serve our customers better, save storage space, and reduce breakage"
says Glen-Gery Shale Brick Corporation, Reading, Pennsylvania

The Glen-Gery Shale Brick Corporation is the largest manufacturer of building brick in the East, with 10 separate plants operating in different parts of Pennsylvania. Here's how they have effected time and space savings by using USS Gerrard Round Steel Strapping.

• During the winter months—normally the off season for shipments—a large inventory of these 500-brick units can be packaged and stored. Then, in the summer when the workload is heavy, a trailer truck can be fully loaded with these USS Gerrard-strapped units by only one man in just 15 minutes! Before

the use of USS Gerrard Steel Strapping was adopted, this same job took *three men 35 to 40 minutes.*

• One of the major reasons the Glen-Gery Company began packaging their bricks was the demand of dealers and distributors for an easy-to-handle unit that would reduce their handling costs, save man-hours, and increase their storage space. The USS Gerrard-packaged units met all these requirements.

• According to the company, packaged bricks stay cleaner, and there is far less breakage—about 2 bricks per 800. As a Glen-Gery official put it—"In transit, the units start out secure and

they stay that way." Strengthwise, the company regards USS Gerrard Round Steel Strapping as the least expensive form of strapping. It "doesn't snag, or lose strength if it is gouged or nicked. It is safer and more effective than any other method for this type and weight of package."

★ ★ ★

It's time for you to try USS Gerrard Steel Strapping—both Round and Flat. Whatever your packaging-tying problem might be, our engineers can help you find the safest, most economical solution to it. Contact us soon.

GERRARD STEEL STRAPPING DIVISION, UNITED STATES STEEL CORPORATION
GENERAL OFFICES: CHICAGO, ILLINOIS



USS GERRARD
Round and Flat **STEEL STRAPPING**

UNITED STATES STEEL



SEND FOR THIS NEW BOOKLET NOW

Gerrard Steel Strapping
2937 West 47th St., Chicago 32, Illinois

Please send me, free of charge, the new 36-page GERRARD Blue Book of Packaging.

Name

Company

Address

City State



CORRUGATED CONTAINERS in three different sizes are stapled on one machine at Melnor Metal Products Co., Inc. The containers are: 16 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " x 7"; 24 $\frac{1}{2}$ " x 7" x 7"; and 30" x 6 $\frac{1}{2}$ " x 6".

High-Speed Stapling

CONTINUOUS research by manufacturers of container closing equipment—in answer to demands for fast, economical closures—has brought about profitable and effective innovations in shipping rooms throughout the country.

A firm where that research is reflected in important cost reductions and higher operating speeds is the Melnor Metal Products Co.,

Inc., Long Island City. It manufactures hose connectors, spray attachments and other "precision-engineered garden hardware". The machine which is helping so greatly to improve packaging operations is an automatic stapler called the Boxlok.

Melnor uses the equipment for simultaneous fastening of tops and bottoms of 200-pound test corrugated cartons. Specially designed

for the machine, the cartons are in three sizes: 16 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " x 7"; 24 $\frac{1}{2}$ " x 7" x 7"; 30" x 6 $\frac{1}{2}$ " x 6". The machine adjusts automatically to each of the three sizes.

Staples are applied from the outside of each container. Smaller boxes receive a staple in each end and larger boxes receive six staples, three through the top overlapping flaps and three through the bottom. Each head of the sta-



CLOSING OPERATION in Melnor's shipping department (left) is built around an automatic stapler which simultaneously fastens tops and bottoms of containers.

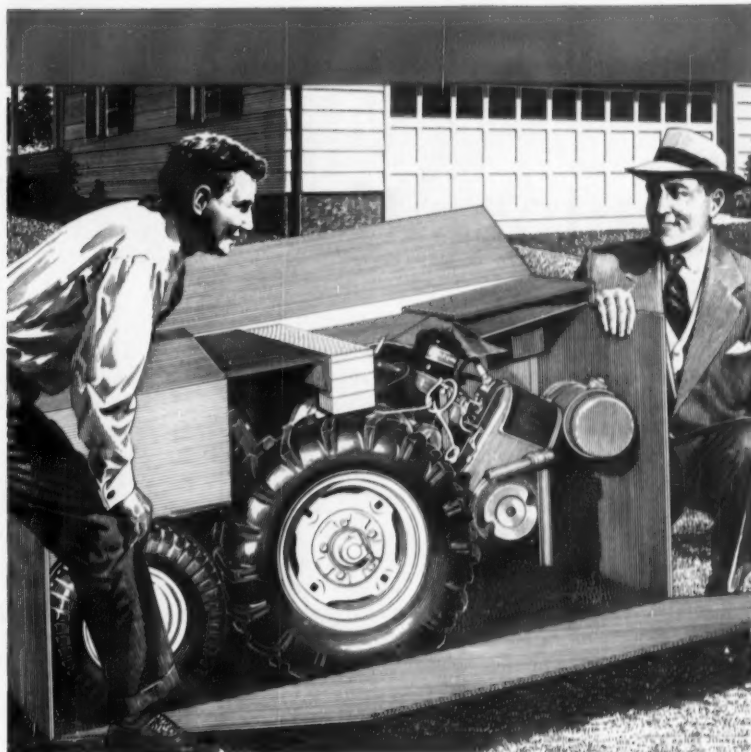
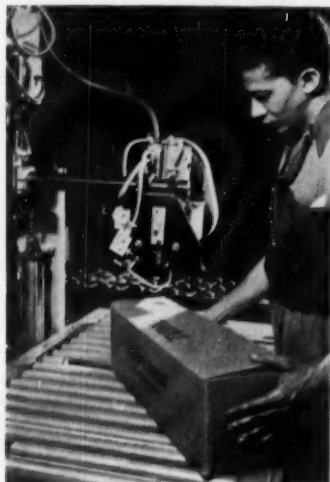
STAPLING MACHINE has stationary head for bottom stitching and movable head which raises and lowers for top-stitching of any size container in 20-inch range. ♦

Operation

pling machine holds four sticks of 50 staples each. Staples with $\frac{5}{8}$ -inch and $\frac{3}{4}$ -inch legs are used interchangeably, without adjustment.

The electrically driven heads are controlled by a foot switch which can be moved to the most convenient position for the operator. The upper head adjusts automatically to the height of each box, within a 20-inch range. The bottom head remains stationary. Through a simple change-over, the machine can be used for right-angle stapling of center seams or diagonal stapling of overlaps.

(Continued on page 114)



NOT ALL CUSTOMERS ARE MECHANICS



CORRUGATED AND SOLID FIBRE BOXES
FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES
KRAFT BAGS AND SACKS

If your product has many parts, this may present a puzzling assembly problem to your customers. One way to avoid complaints is to ship your product completely, or at least partially, set up. Even a 350-lb. garden tractor can be shipped "ready to roll" in a specially-designed Gaylord corrugated container.

For a fresh look at your own packing and shipping practices, call in your nearby Gaylord representative.

GAYLORD CONTAINER CORPORATION • ST. LOUIS

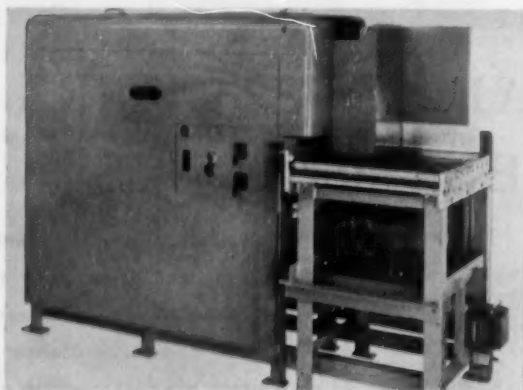
SALES OFFICES FROM COAST TO COAST ★ CONSULT YOUR LOCAL PHONE BOOK
Circle No. 54 on Reader Service Card for more information

Feeder Mechanism Controls . . .

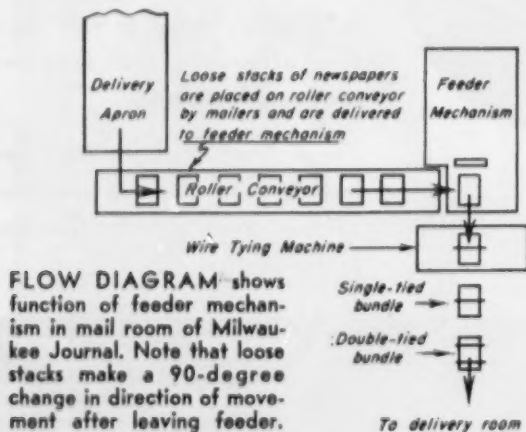
Automatic Bundle Tying

AN air-operated feeder mechanism, used by the Milwaukee Journal to automatically feed bundles of newspapers into a wire tying machine promises to supply answers to bundling problems in other industries. (For instance, bundling of shingles, corrugated cartons, etc.)

Faced with the necessity for handling bundles which sometimes total 100 newspapers per bundle, the Journal decided to find a way to bring mail-room speeds up to the speeds of its modern presses. An experimental model of the feeder mechanism was installed in the mail room to permit design tests and to obtain conclusive proof that the mechanism would perform the task for which it was intended.



FEEDER MECHANISM which has helped the Milwaukee Journal to streamline its mail room operations.



The bundling operation, using the feeder, now progresses smoothly and efficiently . . .

Newspapers are delivered to the mail room on a delivery apron leading from the pressroom. Mailers take newspapers from the apron and place them in loose stacks on a roller conveyor leading to the feeder. At the feeder mechanism a 90-degree direction change is made on each stack of newspapers by means of an electro-pneumatic pusher. Each stack is positioned in a wire tying machine and, at the proper instant, the tying cycle is started automatically. The pusher returns to its normal position to repeat the operation with another loose stack. Incoming stacks of papers are ejected as tied bundles into a delivery chute which leads to the loading platform.

Bundles of newspapers designed for local delivery are single tied with one wire around the middle. Bundles to be delivered out of the city are double tied with two wires, each located about one-third of the length of a bundle from each end. This double-tie feature is fully accomplished by the feeder mechanism.

How Feeder Mechanism Operates

Stacks of newspapers are carried onto the feeder mechanism by means of a roller drive section which is driven by a $\frac{3}{4}$ hp, three phase, gear head motor. The drive section pushes each stack against a trip

(Continued on page 116)



NEWSPAPERS arrive on delivery aprons from high speed presses. Mailers stack newspapers on roller conveyor which moves stacks to feeder mechanism. Feeder automatically positions stacks for single or double-tie.



"Hairflex packaging is as dependable as our DC-7's!"

says E. L. Elliott — Delta-C & S Air Lines

Shipments of delicate flight instruments go to 16 states and 7 countries without one single breakage!

From Delta-C&S headquarters in Atlanta, Georgia, daily shipments of fragile instruments are sent to 22 maintenance bases. Physical-Stores Foreman, E. L. Elliott, reports: "Since adopting the protective packaging of Armour HAIRFLEX in 1953, we have not had one single case of breakage."

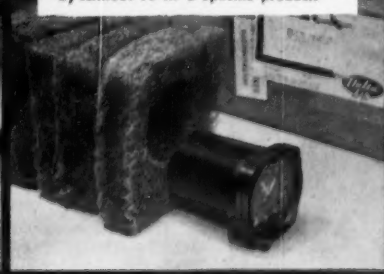
HAIRFLEX is made of springy curled hairs locked in latex rubber—a lively cushion that absorbs even the hardest in-transit shock and vibration. Throughout industry experts like Mr. Elliott are finding that the pillowed protection of HAIRFLEX is the best solution to the delays, repair bills and customer dissatisfaction which result from shipping damage.

You can order HAIRFLEX in bulk, or, Armour will die-cut HAIRFLEX pads to fit *your* product—at no extra cost. So, insist on pillowed protection for your product—HAIRFLEX protection—and send this coupon, today!

Bulk HAIRFLEX comes in sheets of various sizes and densities.



Die-cut HAIRFLEX packs are designed by Armour to fit a specific product.



Note how completely HAIRFLEX protects this fragile instrument.



ARMOUR

Curled Hair

Armour and Company • North Benton Road • Alliance, Ohio

MAIL THIS COUPON TODAY!

F8

Armour and Company, North Benton Road, Alliance, Ohio

Please send me: ☐ A Free Sample of HAIRFLEX ☐ Booklet—"Pillowed Packaging" ☐ Pack specifications and cost estimate for my product (description enclosed).

Name _____ Title _____

Firm _____

Address _____

City _____ Zone _____ State _____

Circle No. 13 on Reader Service Card for more information

AUGUST, 1955

109

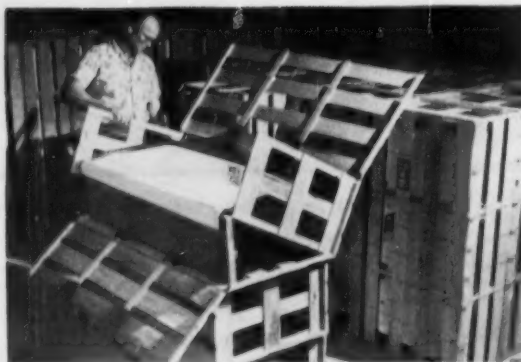


CUSHIONING PADS are stapled to strategic points on cleats of one-piece four-section wirebound wrap-around blank to start bathtub packaging at U. S. Porcelain Enamel Co.

Enameled Bathtubs . . .

Heavy but Fragile

... protected by lightweight shipping containers



WIREBOUND ENDS of crate are attached to one section of the wrap-around blank by slipping the looped ends of their binding wires through pre-cut slots. The wirebound construction is resilient and shock absorbent.

HAZARDS involved in shipping porcelain enameled ware long distances are well known to U. S. Porcelain Enamel Co., Los Angeles. Enameled steel bathtubs for automobile trailers constitute a part of the firm's over-all production.

Each porcelain enameled bathtub weighs 98 pounds and requires thorough protection against damage from ordinary shipping and handling shocks and jars while en route from the Los Angeles factory to destinations throughout the country. They are shipped in carloads, truck loads and less than full loads.

Wirebound crates in two sizes are used for shipment of all sizes of trailer tubs. Because the crates are assembled during the packaging process, pronounced packing-room economies have been effected.

To pack a bathtub for shipment, a one-piece wirebound blank that comprises the four sides of the crate is laid on the floor or atop a previously packed tub.



CORRUGATED CARTON, holding accessories, fits in front of tub at open side of wirebound crate. Pre-cut interior wood blocking is slipped into the crate to prevent shifting. Then, wire loops are engaged and twisted.

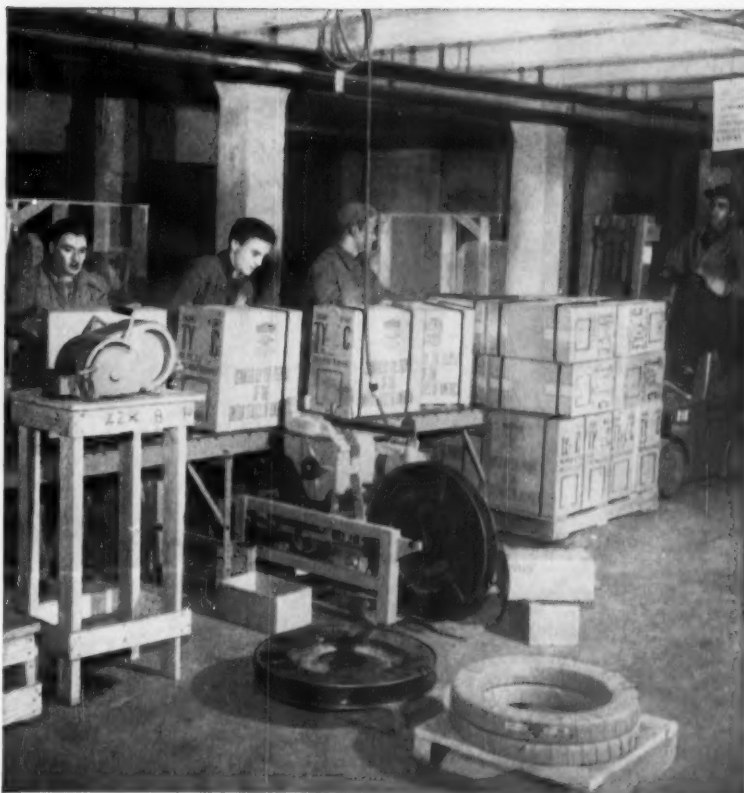
The tub being packed is placed on one section of the blank after protective cushioning pads have been stapled to the cleats of the blank at strategic points.

One side of each of the wirebound ends of the crate is then attached to one section of the blank and the latter is "wrapped around" the tub so that only the front side remains open.

Cartoned accessories and fittings are placed in front of the tub, a piece of pre-cut wooden blocking is slipped between the end of the crate and the end of the tub. The crate is then closed by simply folding shut the open side, securing the other sides of the wirebound ends, engaging and closing the wire-loop fasteners.

Only four man-minutes are needed to pack a tub, including stapling the cushioning pads, inserting the accessories, putting in blocking and closure. Crates are stacked three-high for fork truck handling and storage. Tare weight is said to be remarkably low, considering the fragile nature of the enclosed product and the high degree of protection afforded.

Courtesy Wirebound Box Manufacturers Association.



One of the twelve strapping stations set up by Quaker Export Packaging Co. to handle "Operation Painseltia."

Signode power machines strap 600,000 cartons of food for export in 30 days!

Start November 14th and package 3,592,500 food parcels for shipment overseas in time for Christmas? It was done—in an amazing demonstration of fast organization and sustained effort, with the parcels packed six to a carton, cartons sealed, and reinforced with two steel straps.

Says Benjamin Bernstein, President, Quaker Export Packaging Co., Inc., Philadelphia, "In approximately thirty working days we applied over 1,250,000 straps. During the entire operation there was no major breakdown. This proves the excellence of the design and engineering of the machine, and the excellent service and installation."

This is unitizing on a big scale (and on a hurry-up basis . . . in little more than a week after the first call from Quaker Export, Signode had delivered the power strapping machines and set them up for operation).

Dependability—and experienced, helpful follow-through—are part of every item in the complete line of Signode hand and power tools for tensional steel strapping. For additional information, or a survey of your needs, write,

SIGNODE Steel Strapping Co.

2618 N. Western Ave., Chicago 47, Ill.

Offices coast to coast—Foreign subsidiaries and distributors world-wide.

In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

Circle No. 116 on Reader Service Card for more information



Better Package=Better Handling

NEEED for an improvement in the carpet yarn shipping unit has been a long-time need of the jute industry. Dolphin Jute Mills, looking for lower unit costs, more

efficient handling and better use of warehouse space, developed a method of stacking tubes of carpet yarn directly on wood pallets. The concept was new to the industry.

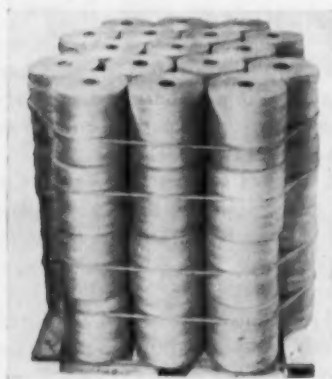
The "old" standard jute carpet yarn shipping bale is a 16-tube unit made by placing tubes into a pre-sewn burlap bag. This is then closed at the top by hand sewing a burlap top to the bag. The unit weighs about 320 pounds. A car-load shipment of 25,000 pounds is made up of 78 small bales which must be individually weighed, transported and stacked numerous times all the way to the carpet making operation.

Dolphin's "Pallet Pack" is made up of a total of 85 tubes, seventeen tubes in each of five layers. Each layer is secured with a twine wrap. The unit load is covered with a burlap hood and wired. It weighs approximately 1700 to 1800 pounds and is easily handled by a fork truck.

Loading time with the new unit is up to 65% less than with the old type bales. Unloading is similarly speeded up.

In warehousing, the Pallet Pack is easily and safely stacked three-high.

For use, wires are cut and the hood is lifted off. Readily accessible are 85 yarn packages. Opening time has been reduced by 75-80%.

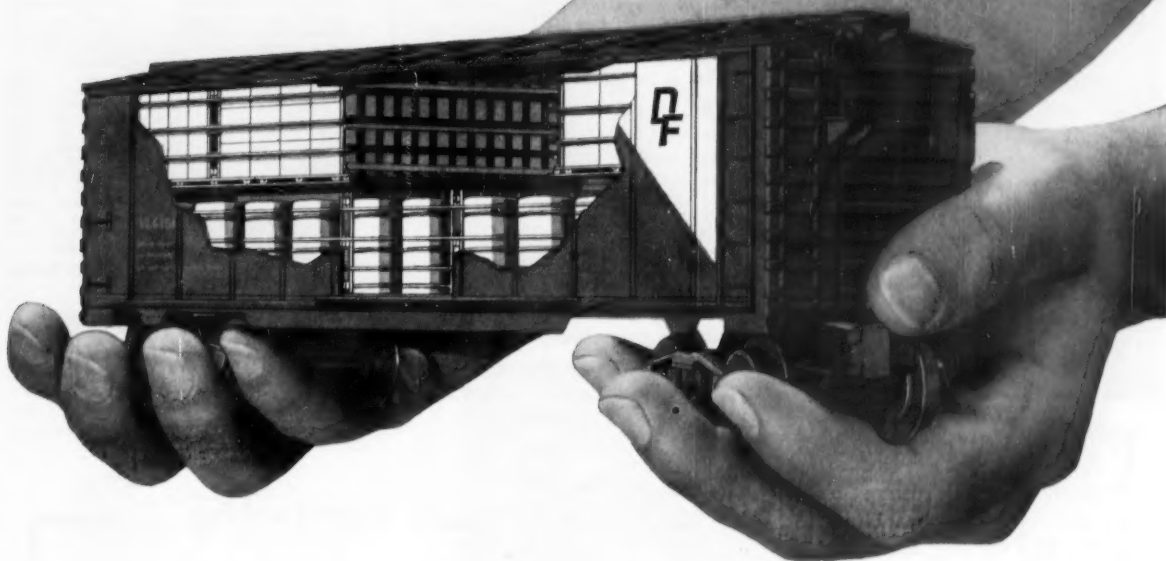


EIGHTY-FIVE TUBES of yarn fit on a single pallet in new method devised by Dolphin Jute Mills. Former method utilized pre-sewn burlap bag containing 16 tubes.

HIGH STACKING and easy handling are features of new pack.



In safe hands



Railroads and shippers alike know that freight damage, due to load-shifting in transit, runs into millions of dollars annually. They're discovering, however, that Evans DF* equipped box cars lock in the lading, do away with costly dunnage, permit multi-decking and virtually eliminate damage. For these reasons, forty-two Class I railroads find their DF cars in constant demand as more and more shippers learn that they can safely load more per car . . . in less time . . . at no extra cost. And bigger loads per car bring the railroad more revenue per car mile.

*DF means damage-free, dunnage-free . . . only Evans makes it!

LOCKS IN LADING, ELIMINATES DAMAGE AND DUNNAGE...



FREE BOOKLET brings you complete facts about DF equipment and its adaptability to any type of lading. Write for your copy to Evans Products Company, Dept. AF-8 Plymouth, Michigan.

Circle No. 50 on Reader Service Card for more information

*Here's how
to close*
**MULTIWALL
PAPER
BAGS**



Union Special Style
20100 H Bag Closing
Machine

FOR lower production costs . . . stronger, neater closures . . . ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your requirements. ASK FOR RECOMMENDATIONS.

SEND FOR THIS BULLETIN!

It's easy to find just the right unit to meet your individual needs in Union Special's big line of bag closing machines. Ask for a copy of Bulletin No. 280, "UNION SPECIAL FILLED BAG CLOSING MACHINES."



Union Special
MACHINE COMPANY
415 N. FRANKLIN ST., CHICAGO 10, ILL.
Circle No. 131 on Reader Service Card
114

STAPLING . . .

(Continued from page 107)

Essential to proper positioning of staples is a centering device which is made up of two frames (with separate top and bottom members) which compress the box and locate it in the proper position for right-angle stapling. For diagonal stapling, the box is pressed against the stationary rear frame. Frames can be lifted to an 18-inch height. A thumb latch releases them for lowering. After each staple has been driven, the centering frames release pressure, permitting the box to be moved to the next location.

Melnor officials have compared present closure operations with the previous method and have found that twice as many boxes can be stapled, in a given period of time, with only two-thirds as much manpower. Furthermore, the new equipment has resulted in savings in floor space.

Information and photos in the preceding article were through the courtesy of Bostich, Inc.

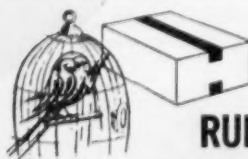
Circle No. 101 on Reader Service Card



- **SO FLEXIBLE** . . . Conforms to any shape.
- **SO CUSHIONY SOFT** . . . Absorbs transmission of shock, vibration and pressure damage.
- **SO LOW IN COST** . . . You can use it freely

Industry's newest 100% flexible wrap material gives your products the protection they need from jars and jolts at new low costs! SOF-RAP is a multi-wall wrinkled cushion material that provides stretch and permits "slippage" . . . safeguarding against abrasion damage from friction and chafing. Soft-resilient inner cushion is strip-laminated to a tough, durable protective outer wrap that resists tears and punctures — perfect for exterior-interior packaging. Cushion sheet is also available without outer sheet backing for use where only interior protection is required.

Send for this Free Booklet.



— IT ONLY TAKES 2 . . .

**RULE 41 AMENDED TO ALLOW
2-STRIP CENTER-SEAM SEALING**

CUT COSTS UP TO $\frac{2}{3}$ WITH

**Filament Reinforced Sealing Tapes
And The FAMOUS**

**DERBY
32-T**

The first important closure method change in 40 years! . . . now use 2 strips of tape for all shipments! The Derby 32-T especially designed to dispense all brands of tough filament reinforced tapes quickly, easily, accurately!



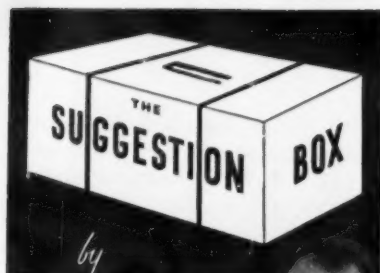
Cut Your Shipping Room Costs!

Write now, Dept. F for free booklet about 2 strips and the Derby 32-T



DERBY SEALERS, INC.
DERBY, CONNECTICUT

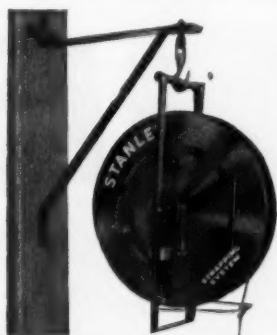
Circle No. 144 on Reader Service Card for more information
FLOW (PACKAGING & SHIPPING SECTION)



STANLEY
THE STEEL STRAPPING
SPECIALIST



I suggest using this Model NR Stanley Steel Reel Stand for faster, more convenient strapping. Can be moved easily and swiftly from one packing location to another. Designed with a handy tray to hold tools and seals, and has an automobile-type brake.



Perhaps you have a space problem. If so, this out-of-the-way Stanley Overhead Reel is made to order for your steel strapping application. Suspended from ceiling or post bracket, it speeds up your packing procedure without taking up valuable space.

Call on me to show you how to step up your packing pace by selecting items from Stanley's line of steel strapping accessories that will fulfill your requirements completely. Stanley reels, stands, conveyor units, strapping frames, coil holders, etc. — like Stanley engineered hand and power tools — have been proved in thousands of applications throughout industry. Let me help you redesign your packing methods to save time, reduce costs and insure greater package security.



The Tool Division of Hubbard & Company, Pittsburgh, Pa., manufacturers of railroad maintenance tools, wanted to pack four sledge hammers in one bundle, yet keep container needs to a minimum for economy's sake. Another requirement was protection of the hammer heads' bright finish, which has sales appeal value. Here, another difficult packing job was made easy by using Stanley Steel Strapping.



The heads of the four hammers are encased in a "semi-carton" and bound in place by two bands of ½" Stanley Steel Strapping, applied with the Stanley ACE Strapping Tool. Four hard-to-pack

products become **one** compact, secure and economical package.

The Stanley Steel Strapping Specialist has ideas that will improve your materials handling operation. He'll **prove** that Stanley has steel strapping hand and power tools that will pack **any** product easier, faster, safer.

Mail coupon today for free Catalog and to arrange an obligation-free appointment.



INSURE IT — SECURE IT WITH STANLEY STEEL STRAPPING

STEEL STRAPPING DIVISION

THE STANLEY WORKS

STANLEY STEEL STRAPPING DIVISION, 088-S LAKE ST., NEW BRITAIN, CONN.
Telephone: BALDWIN 9-2021

☐ Please send Catalog \$5-9C.

☐ Please have Representative call.

NAME _____

POSITION _____

COMPANY _____

CO. ADDRESS _____

CITY _____ ZONE _____ STATE _____



STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS
STANLEY STEEL STRAPPING • STANLEY STEEL

Circle No. 121 on Reader Service Card for more information



One man easily carries the tape dispenser to the cartons, quickly applies the short strips of Tape-Strap that reinforce the 300-lb. cartons.

Packaging time cut 60% with **TAPE-STRAP®**

(gummed filament tape)

Wolverine Bolt Company, Detroit, packages bolts and upset products in Belsinger cartons. Average weight of shipments is 300 lbs.

The company was reinforcing the cartons with material applied with elaborate equipment and requiring excessive time. Then they switched to Tape-Strap.

A tape dispenser is the only equipment required. One man carries it anywhere in the plant, applies one short strip of 1½"-wide Tape-Strap over the joint on each side.

The Tape-Strap reinforcement has proved just as effective as the previous method. There's no chance of damaging the carton—Tape-Strap is applied without pressure. Labor cost per carton has dropped 60 per cent. No wonder Tape-Strap is popular in the shipping department . . . and in the treasurer's office at Wolverine Bolt Co.

FREE SAMPLE ROLL—Try Tape-Strap reinforcement on your own shipments . . . see how you can cut costs with this super-strong gummed reinforcing tape. Write for sample roll.

LEADERS IN THEIR LINE

MID-STATES Gummed Paper Company
2511 S. DAMEN AVE., CHICAGO 8, ILLINOIS

New York • Syracuse • Philadelphia • Boston • Atlanta
Cleveland • Detroit • St. Louis • Los Angeles

Circle No. 94 on Reader Service Card for more information
116

BUNDLE TYING . . .

(Continued from page 103)

plate, or bundle stop, which energizes the feeder mechanism. The bundle stop permits handling newspaper stacks up to a height of 20 inches without upsets. It also straightens out stacks which are placed on the conveyor askew, or which are not vertically straight.

When a bundle advances to the bundle or trip plate, the roller drive is stopped automatically. Thus, when the pusher begins to transfer the bundle into the tying machine, no damage is caused to the bottom wrapper by turning rollers. Also, a succeeding bundle cannot cause a side thrust on the pusher which is positioning a bundle into the tying machine.

To double-tie a bundle of newspapers, it is only necessary to turn a control switch to the "double-tie" position. Then, a bundle advances to the bundle stop, the pusher moves it far enough for the first tie. After the first tying cycle is completed, the pusher advances the bundle to the second tie position. As the second tie is being completed, the pusher returns to its original position, the roller drive is again started up and the feeder is ready for the next bundle.

A limit switch on the wire tying machine prevents operation of the feeder in case of wire breakage. This is important to avoid ejection of an untied bundle.

For data and photographs, FLOW thanks R. E. Miller, vice president, Curtis Development & Mfg. Co., who handled original design and engineering of the feeder installations for the Milwaukee Journal.

Low-cost case marker saves \$



pays for
itself in
weeks!

ROLACODER
Imprinter
attaches to
conveyor or
case-sealer



Now you can do away with that costly extra operation for manual rubber-stamping or stencilling of code-dates, lot numbers, contents descriptions, etc. on cases . . . or reduce big inventories of completely printed cases . . . and save thousands of dollars annually. Use an inexpensive ROLACODER machine to mark your cases automatically on the production line. Compact, precision-made ROLACODER is friction-operated, self-inking—makes single, accurately located imprint on each case to register with other copy. Uses quick-change rubber type or dies, holds 8-hour ink supply. Different models available to imprint top, ends, sides of small or large boxes, cartons, cases, other packages.

Write for descriptive literature

Gottsch

ADOLPH GOTTSCHO, INC.
Dept. D, Hillside 5, N. J.

Automatic
CODING, MARKING,
IMPRINTING
MACHINES

In Canada: RICHARDSON AGENCIES, LTD., Toronto & Montreal
Circle No. 62 on Reader Service Card for more information
FLOW (PACKAGING & SHIPPING SECTION)



Not when you use KIMPAK 301!

New KIMPAK 301 is the practical solution to surface damage to furniture finishes during shipment. KIMPAK 301's ability to shield the fine finish against scratching makes it the ideal protective agent in a furniture package. KIMPAK 301 costs no more than ordinary materials. It is specially designed to protect against the major causes of scratching:

1. Abrasiveness of the inner spacers. KIMPAK 301 provides a scratch-free, non-disintegrating, compressible barrier between inner spacers and the furniture finish. Its conformability ensures a snug package.

2. Dust, dirt, cinders that sift into the container. The combination of

high creping and porous structure—exclusive with KIMPAK 301—provides a trap for dirt, grit or cinders, which may lodge between the packaging material and the polished surface.

3. Abrasive action of harsh packaging materials. KIMPAK 301 is soft and non-abrasive . . . free from wood splinters, dirt and other abrasive materials. No lumps, hard glue spots or stiff wrinkles.

Scratching is but *one* of many problems encountered in furniture packaging. These problems are *solved* when new KIMPAK 301 is specified. For more details, contact your local KIMPAK distributor, or mail coupon below.

SPECIFY KIMPAK 301 TO SOLVE THESE INTERIOR PACKAGING PROBLEMS:

Scratching
Pressure-marking
Staining
Chafing
Conformability
Ease of handling
Disintegration

Whatever your protective interior packaging requirements, there is a Kimpak specification that does the job... better!

Kimberly Clark
INTERIOR PACKAGING
KIMPAK 

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin

We would like to learn how new KIMPAK 301 can provide better protection at lower cost for our products. Please send complete information.

Name

Firm

Street Address

City Zone State

Circle No. 78 on Reader Service Card for more information

AUGUST, 1955

**Wire coils
fully
protected for
overseas
shipment...**

**with
GREEN CORE®
BARRIER
RAP**

Packaging wire coils for shipment abroad has been a faster, easier, lower cost operation for Chicago Steel & Wire Co., ever since they changed to Green Core Cloth Rap, back in 1947.

The Cloth Rap is made up into greaseproof, moistureproof, self-sealing bags. Each bag holds 20 coils... a 100-lb. load that fits snugly into a wooden box lined with a sheet of Green Core Cloth Rap.

**Sharp edges stay keen
under Green Core® Rap**



To protect tool edges for domestic shipment or storage, Chicago Screw Company uses economical Green Core Rap. This sheet has a greaseproof film laminated to creped kraft. Both sides are wax coated, self-sealing.

Write for samples and test data on Green Core Cloth Rap, Type "C" Barriers, Class I, Type 2, and Class II, Type 2; economical Green Core Rap; and the anti-corrosive, rust and mold preventative Green Core Red Rap.

LEADERS IN THEIR LINE

MID-STATES Gummed Paper Company
2511 S. DAMEN AVE., CHICAGO 8, ILLINOIS

New York • Syracuse • Philadelphia • Boston • Atlanta
Cleveland • Detroit • St. Louis • Los Angeles

Circle No. 95 on Reader Service Card for more information
118

SMALL SHIPMENTS . . .

(Continued from page 104)

is. Thus, pickups can be planned and scheduled, and proper equipment can be assured. Poor service from carriers can usually be traced to shortages of equipment. Carriers who have been notified far enough ahead of time to gauge shippers' requirements can schedule vehicles to be where they are needed when they are needed.

10. Assist the driver.

Remember, it is your dock from which shipments are being loaded. Letting the driver find his own freight, and letting him load it as best he can, is a good way to tie your dock in knots.

11. Check freight when it is floored in the shipping department.

If the shipper checks freight carefully and segregates it by carrier, all the driver need do is make a total-piece count. Speed and accuracy are assured.


12. Cooperate on sequence and header loading.

When the carrier drops trailers at the dock for shipper's personnel to load, the dispatcher should be informed of the destinations of the shipments. He will supply a sequence for loading. Then freight can move straight through to destinations without having to go through the local terminal.

FOR

**FAST,
SECURE,
LOW COST**

BAG CLOSING



FISCHBEIN
Portable
BAG CLOSER

**FOR DETAILS,
MAIL THIS COUPON NOW
DAVE FISCHBEIN CO.**
Dept. 4B
38 Glenwood Ave. N.
Minneapolis, Minn.

- A truly portable bag closer . . . Weighs only 10½ pounds.
- Requires no installation . . . plug into any outlet.
- Handles textile and paper bags.
- Simple to operate and maintain.
- Lowest priced bag closer on the market.

Name.....

Firm Name.....

Address.....

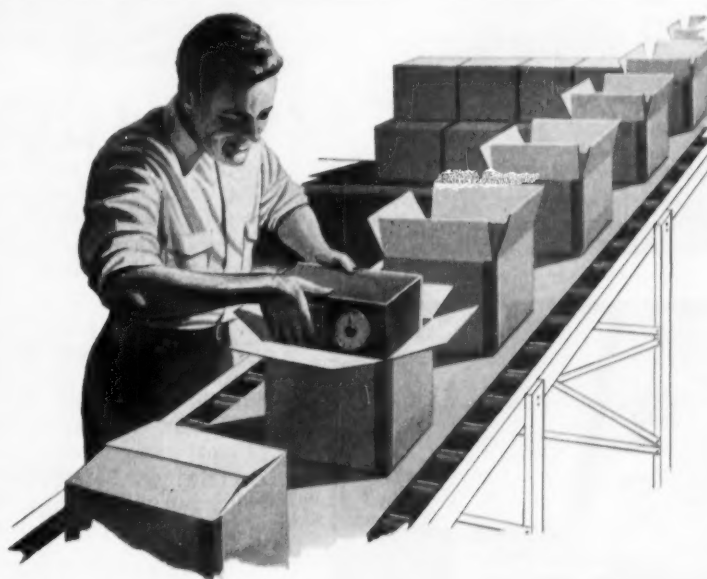
City.....

State.....

Circle No. 53 on Reader Service Card for more information
FLOW (PACKAGING & SHIPPING SECTION)

Circle No. 10 on Reader Service Card →

TAPED BOXES



ARE BEST

You get even corners for good stacking . . . greater safety for the handler . . . better sealing against dirt and dust . . . no damage to merchandise — a hazard from other methods of closing. Yes, taped boxes are best — and best of *all* when made with non-asphaltic, glass reinforced LOKABOX, strongest of them all — or SISAL TAPE, standard of the industry.

Eliminate Printed Carton Inventory Costs!

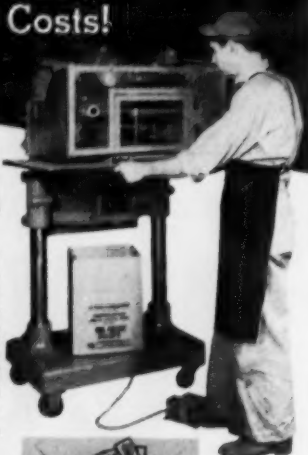
IMPRINT
your cartons
as you need
them with a
YOUNG
Carton Printer

No longer is it necessary for you to keep large stocks of printed cartons. Now you can imprint trademarks or special data either alone or in combination with company name, address, contents, size, etc.

Cartons printed on a **YOUNG CARTON PRINTER** will set your cartons apart from competition in appearance and readability.

Contact your nearest D/B distributor for more details.

DIAGRAPH-BRADLEY INDUSTRIES Inc.
P. O. BOX 269 HERRIN, ILLINOIS
DISTRIBUTORS IN ALL PRINCIPAL CITIES



Imprinting special data on knuckled down cartons is quick, easy and positive.



This "free" file-folder kit will show you

How to modernize your shipping operations

NOTHING LIKE IT EVER BEFORE. Not a catalog of products, but a file-folder of systems created to streamline shipment addressing and product identification marking, and simplify shipping paperwork. It describes and illustrates how to address and mark shipments faster, cheaper, and with less errors... how to tie-in addressing operations with preparation of shipping paperwork... and many other methods for making your shipping operations more efficient at a lower cost.

GET YOUR COPY OF THE WEBER LABEL AND MARKING SYSTEMS FILE-FOLDER KIT RIGHT AWAY. NO CHARGE OR OBLIGATION.

Weber

label and marking systems
Division of Weber Addressing Machine Co.
Dept. 1-H, Mount Prospect, Illinois
Phone: CLearbrook 3-2405

Circle No. 135 on Reader Service Card for more information
120

MEN IN THE NEWS . . .

(Continued from page 38)

At Goodyear Tire and Rubber Co. . . Dr. Ray P. Dinsmore has been chosen to receive the Charles Goodyear Medal for 1955 by the Rubber Division of the American Chemical Society. Dr. Dinsmore is vice president in charge of Research and Development, and has been associated with Goodyear for more than 40 years. The award is presented annually to a person who has made a valuable contribution to the science or technology of rubber or related subjects.

At American Box Co. . . General Sales Manager A. R. Caputo, and Production Manager Glenn E. Maxfield, were elected to the board of directors. Top level promotions advanced **Henry S. Kubes**, vice president and manufacturing manager, to executive vice president; **John P. Kubes**, director of package research, to vice president; and **Z. R. Meredith**, comptroller, to secretary and assistant treasurer.

At Thilmany Pulp & Paper Co. . . Joseph T. Thomas, central sales division manager, and **Charles L. Dostal**, assistant to the executive vice president, were elected to the board of directors. **Verne G. Haag** was named general sales manager of the Wisconsin firm.

At Allis-Chalmers Mfg. Co. . . New president of Canadian Allis-Chalmers Limited is Harold M. Schudt. He succeeds Mark C. Lowe, who has resigned. In his new capacity, Schudt has charge of operations which include general offices in Lachine, Quebec, manufacturing plants at Lachine and St. Thomas, Ontario, and sales offices in Montreal, Toronto, Winnipeg, Calgary and Vancouver.

At Nashua Corp. . . Robert A. Brown has succeeded Vasco E. Nunez, who retired, as president. A graduate of Dartmouth College, Brown joined Nashua as executive assistant, after service in the First World War. In 1932 he became a member of the board of directors; was named vice president in 1944, and executive vice president in 1950. Since 1951 he has been president of Canadian Nashua Paper Company, Ltd. and Canadian Seal-right, Ltd.

At Atlas Plywood Corp. . . Charles V. Molesworth, president of Plywood, Inc., warehousing and distribution subsidiary of Atlas, was elected a director of the parent organization. In addition, he will be responsible for the operation of Davidson Plywood and Lumber Company, a wholly-

FLOW (PACKAGING & SHIPPING SECTION)



YOU ARE CHOSEN...

because you qualify!

Do you know why you get this magazine without charge? How can the publisher afford to send you this leading national magazine every month—without cost to you? Here's why . . .

**Advertisers insist on
Quality Readership**

It's that simple!

Your local material handling equipment distributor pays us for your subscription to FLOW because he knows you are an important material handling equipment user; because he knows you are responsible for specifying and/or buying material handling equip-

ment. Naturally, he is only willing to spend this kind of money on his best and most important customers.

***This type of circulation is called
Franchise Circulation***

FLOW readers are *hand-picked*. They are important people in the material handling field—they are carefully chosen because of their interest in new and better material handling products, equipment and techniques.

That's why—FLOW spends considerable time, money and effort on every issue to make it worthwhile reading—realistically helpful, intelligently interesting and useful to our *important readers*.



FLOW MAGAZINE

1240 ONTARIO STREET

• CLEVELAND 13, OHIO



THE NEW A-B-C Junior CASE SEALER

The A-B-C Junior Case Sealer automatically seals corrugated shipping containers in only a fraction of the floor space ordinarily required. Operation is fast—trouble free—economical. A completely new flight chain construction virtually eliminates carton jamming . . . Three semi-automatic models are available to fit most case sizes. Write today for details and floor plans.

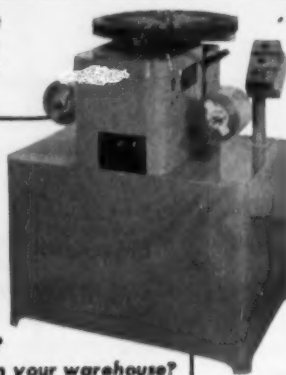


A-B-C PACKAGING MACHINE CORP.
QUINCY, ILLINOIS

PAK-RAPID equipment eliminates old-fashioned, manual packing operations.

DO YOU

1. Buy prefab bags?
2. Inventory them in your warehouse?
3. Print them at added cost?
4. Deliver them to the operation?
5. Open them by hand?
6. Hand fill them?
7. Seal them by hand?
8. Count them by hand?



ONE PAK-RAPID MACHINE ELIMINATES THESE OLD-FASHIONED METHODS, DOES THESE JOBS AUTOMATICALLY IN A ONCE THROUGH OPERATION.

In addition, it gives you: versatility—efficiency—economy—simplicity. Get full details and new literature from your PAK-RAPID representative or, write us direct.

PAK-RAPID INC.

Incorporated 1945

Builders of Fine Packaging Machines

530 N. 21st Street

Philadelphia 30, Pa.

MEN IN THE NEWS

Continued

owned subsidiary. Molesworth was president of Adam Hat, Inc. and vice president in charge of operations for John B. Stetson Company. Prior to that time he was associated with the rubber industry for ten years in an executive capacity.

At Brainard Steel Division . . . James R. Pumphrey was named administrative assistant to the general sales manager. He joined Brainard in 1940 and has been connected with all phases of manufacturing, engineering and production control. Most recently he served as assistant sales manager of the Tube and Strip Division.

At Dow Chemical Co. . . . New general manager of the Midland Division is **Dr. William H. Schuette**. He began his career with Dow in 1941 and has served in a number of capacities. He will now devote his entire attention to administrative affairs on a company-wide basis. Dr. Schuette is a native of Cleveland and a graduate of Case Institute of Technology.

At Permcel Tape Corp. . . . Industrial and automotive sales manager, **George A. Fitzgerald**, has been named a vice president. Associated with Permcel since 1938, he was appointed to his present position in 1953.

At Chrysler Corp. . . . Appointment of **Norman R. Reno** as works manager of the Marine and Industrial Engine Division was announced by **William A. Martin**, division president and general manager.

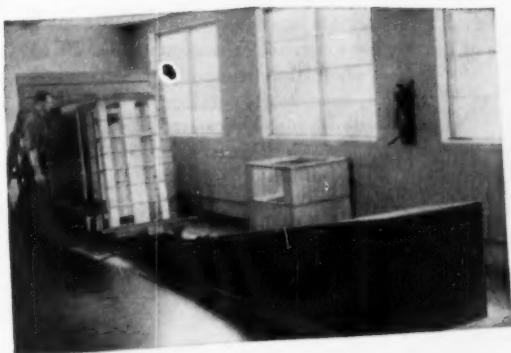
At H. K. Porter Co., Inc. . . . Factory and field activities of Quaker Pioneer's belting and packing departments will be coordinated by **H. A. Wiley, Jr.**, recently appointed manager of Belting and Packing Sales, Quaker Pioneer Rubber Mills.

Thinking of Introducing a New Product?

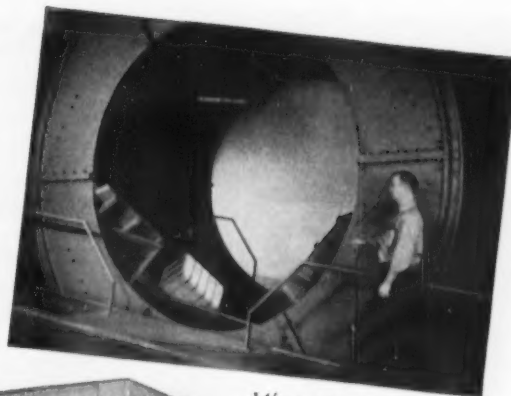
Steps that may be taken to meet the more common problems which arise in planning new-product development and marketing programs are described in simple terms in a booklet published by the Department of Commerce. The booklet helps to answer frequently-asked questions as:

1. How and where may ideas for new products be found?
2. How may a company improve its chances of selecting a successful new product?
3. How may a new product suitable to customer needs and desires be built?
4. How should name, package, and trade-mark be chosen?

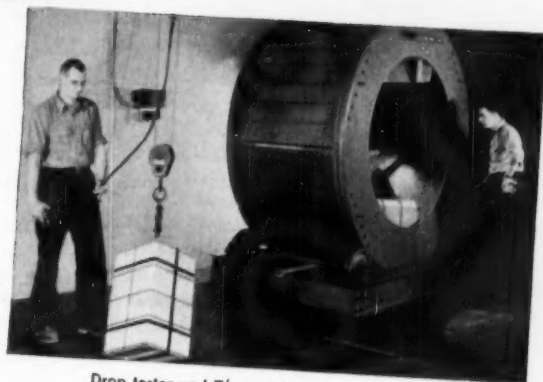
It is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price is 40 cents.



Incline
impact
tester



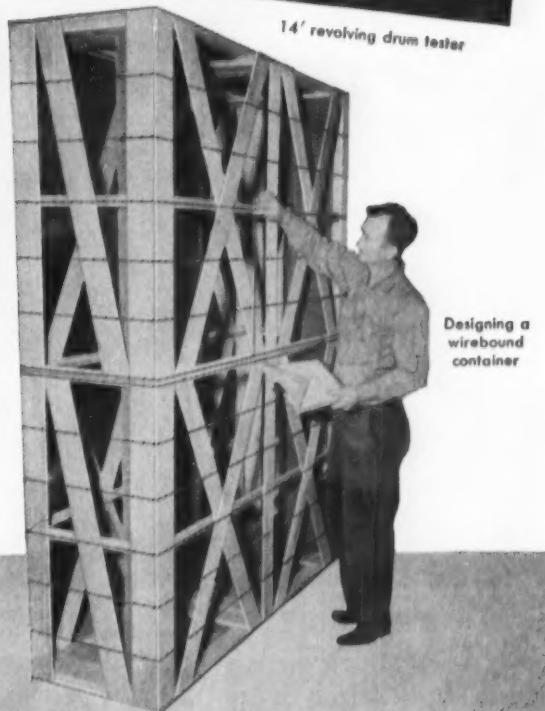
14' revolving drum tester



Drop tester and 7' revolving drum tester



Vibration tester



Designing a
wirebound
container

General Box behavior clinic for shipping containers

When General Box designs and tests a container for your product, there's little room left for guesswork about its behavior. Some of the reasons are illustrated above. How it will handle in your plant, how it will pack, how it will ship, and how it will arrive and unpack are all considered.

General Box design engineers know the importance to you of every possible saving in packing, shipping, and direct container costs. And every month they design containers for all kinds of things—machine tools that weigh several tons . . . "hard to pack" products like radar an-

tenna . . . major appliances . . . component parts in bulk.

Whether you believe the best container for your product will be a toughie or a snap to design, it will pay you to find out what the General Box answer is. It's easy to do—just let us send a man. No obligation. Write for your copy of the "Heavy Duty" issue of "General Box."

Factories: Cincinnati; Denville, N. J.; East St. Louis; Detroit; Kansas City; Louisville; Milwaukee; Sheboygan; Winchendon, Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

Engineered Containers for Every Shipping Need

- Wirebound Crates and Boxes • Generalift Pallet Boxes • Corrugated Fiber Boxes • Cleated Corrugated and Watkins-Type Boxes • Stitched Panel Crates • All-bound Boxes

See our exhibit at the SIPMHE Show, Kingsbridge Armory, New York, Booth 403, September 20-22.

Circle No. 55 on Reader Service Card for more information

General Box

1847 Miner Street, Des Plaines, Ill.



LOAD-CELL WEIGHING...

(Continued from page 79)

The Transmitter Control Unit converts the magnitude into electrical pulses and also controls the sequencing and pulsing of the information into the transmitter.

The Transmitter is a high frequency carrier communication unit or low power radio or micro-wave equipment. It is located near the basic recorder used in electronic

weighing and may be furnished to operate off locally available power.

The Receiver receives signals and actuates the printer.

The Printer converts sequences and pulses from this receiver into data printing wheels. It operates from the control unit and prints tape or ticket at remote locations, instantaneously, as the recorder in the cab prints the weight.

Let us review an electronic crane weighing operation. It is weighing and loading a truck with steel. The

crane operator picks up the load on an electronic crane hook and goes directly to the truck, stops momentarily, pushes a button—and the weighing and telemetering operation is completely automatic from this point. The operator drops his load onto the truck and goes back for another batch. The whole operation is fast and accurate, requiring no additional personnel for the weighing operation.

Four Signal Carriers

1. Small gauge wires—either privately owned or leased from the Telephone Company. Some systems can send one signal over a pair of wires; others can send multiple or bi-directional signals over a pair of wires.

2. Existing Power Lines—multiple signal type, bi-directional systems for recording or reporting purposes.

3. Radio—rarely used, but can be for special applications.

4. Micro-Wave Transmission—used in long range transmission.

Uses of Telemetering

1. Indicating and Recording. Remote indication is an ideal means of keeping constant check, at a central point, on conditions. However, to be effective, the indicator must be watched and have an application where a man is required to make a constant check. In addition to weighing, telemetering has been frequently used to record demand trend, water level fluctuations, and well production.

Another practical use is recording of pressures, flow, pump operation or power consumption.

2. Alarm Systems. The purpose of alarm is to provide protection when equipment is left unattended. For efficient remote alarm protection, the alarm and condition sensing equipment is as important, or more so, than the transmitting equipment.

3. Controls. Transmission of one or more signals to a central point for the purpose of controlling equipment operation is the highest development of telemetering.

The advantages of remote, cen-

B-G FOR SAFE HANDLING AND SHIPPING



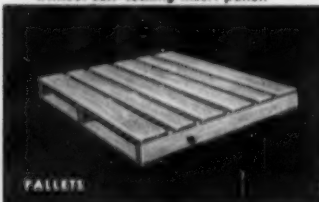
MODEL A

Pallet Box is easily attached to any standard pallet by means of 4 corner irons and flat or round steel strap. Collapsible for storage and return shipment.



MODEL B

This collapsible pallet box has front opening for easy access to contents when stacked or in racks. Furnished with or without self-locking insert panel.



Hardwood pallets made in all sizes and styles. Nailed with cement-coated drive screws.

For greater strength in stacking, materials handling and shipping, use Bigelow-Garvey Tight-Corner Collapsible Crates and Pallet Boxes. Designed to withstand transportation and handling hazards, B-G containers are extra strong for stacking and ideal for storage. Shipped in two or three sections. Fully assembled. Pre-drilled nail holes enable quick packing. Let us design sample container to meet your requirements.



MODEL C

B-G Collapsible, hinged pallet box with drop-leaf panel for greater accessibility. All B-G pallet boxes can be furnished with top cover, if desired.



EXPENDABLE

B-G expendable pallet box, designed to withstand specified loads. Inexpensive, permitting discard after usage. Top cover, if desired.



TIGHT
CORNER
CRATE

The collapsible crate with the exclusive B-G Tight-Corner Hinge. Offers unusual rigidity and strength, yet light in weight. Easily assembled. Nail holes pre-drilled. Made up in 3 parts. Shipped collapsed.



MILLS: ARKANSAS GEORGIA WISCONSIN MINNESOTA ILLINOIS

always check

General Office and Laboratory

Write for complete details and prices to...

BIGELOW-GARVEY

lumber company

336 W. HURON STREET • CHICAGO 10, ILLINOIS

Phone
Whitcomb
4-5252

Circle No. 19 on Reader Service Card for more information

FLOW (PACKAGING & SHIPPING SECTION)

tralized, automatic control at local points are numerous. The savings in production time, machine hours and generally increased efficiency—which a properly designed remote control system can provide—may amount to thousands of dollars a year in the average weighing system for one example.

Three Basic Telemetering Models

No "one" basic system is both flexible and economical enough for all telemetering applications. Each system is simple and uses only common electrical components such as resistors, transformers, rectifiers, capacitors and relays.

One-Way Ametron System:

This basic step automatically transmits single signal control intelligence in one direction over a single pair of wires between physically separated elements of a system. Ametron telemetering eliminates distance between such elements by joining them operationally.

Two-Way Ametron System:

A modified version of the standard two-step circuit is designed to transmit control intelligence in one direction and return reporting information in the other direction over the same pair of wires. The return signal is sent back to the receiver to notify operators that action called for (manual or automatic) has taken place. This circuit would transmit information only if the stations were manned by personnel.

Multiple-Way Ametron System: Multiple step system transmits remote signal control intelligence to any number of remote receiver stations, simultaneously, over a single pair of wires.

The telemetering system can be incorporated in motion weighing track scales, in conveyor scales, in hopper scales (Fig. 10) in mono-rail scales, in rate of flow control applications (Fig. 12) and numerous of other applications.

Future of Electronic Weighing and Telemetering

With the "era of automation" in its infancy, electronic weighing and automatic transmission of information will become a vital part

Choose the right packaging closure the way you buy a truck!



IN TRUCKS, it's the type of *performance* you need that decides your ultimate choice. In packaging too, the needs of your particular operation should decide the closure you use. Hudson has an improvement to give you more speed, more efficiency, more protection, and more economy too! Select the product you want to free test and let us send you a sample:

FASTWELD for speed in two-strip* production line sealing—for overall center seam protection that beats stapling, stitching or gluing. The fastest closure possible, and the biggest labor-saver. Reinforced in both directions with Fiberglas®, Fastweld comes to you with an extra heavy coat of Hudson's exclusive adhesive—Supple-ized® for easier handling.

*Authorized by amended U.F.C. Rule 41

BLUE RIBBON for speed in complete closure. The quality tape with incredible speed of adhesion. Just one fast sweep of the hands and you get a tighter, more permanent seal against dust, smoke, moisture, vermin. The secret—Hudson's exclusive adhesive, Supple-ized to give you instant full-depth moistening . . . quicker, better sealing.

ORANGE CORE for economical standard sealing. Every inch on every roll sticks with the same bulldog grip because Hudson controls all its ingredients. Hundreds of thousands of users depend on Orange Core's consistently superior quality and have made it the world's largest selling gummed sealing tape.

Quality Products by

Hudson
PULP & PAPER CORP.

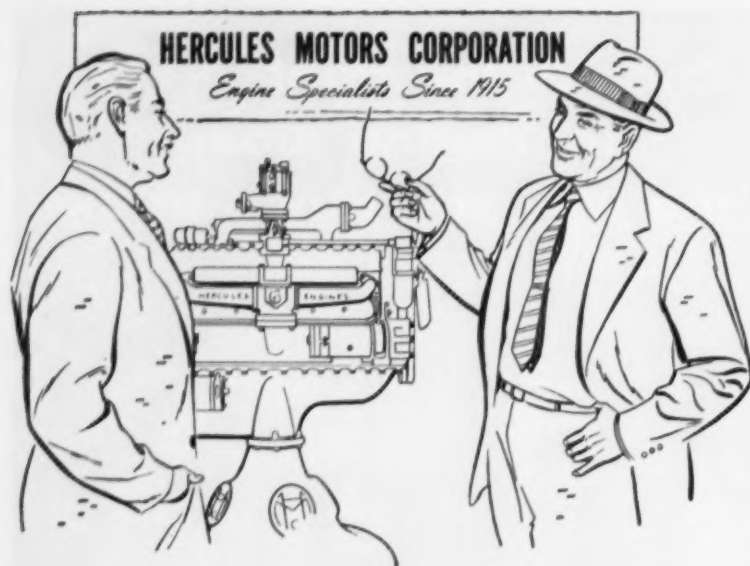
477 Madison Ave., New York 22, N. Y.

Circle No. 141 on Reader Service Card for more information



P.S.

On your letterhead—write Dept. F-8 and tell us which product you want to free-test . . . Fastweld, Blue Ribbon, or Orange Core!



It May Cost a Little More to Buy the Best
But **HERCULES ENGINES** give you
So Much More for your money.

- (1) Long-life service . . . not just an idle statement. Many HERCULES ENGINES 5, 10, and 15 years old are still delivering dependable day-in, day-out power.
- (2) Engines designed to-the-application . . . granted, we have over 90 standard models but they are not off-the-shelf items. HERCULES ENGINES are custom-produced to specifications of the equipment.
- (3) Gasoline or Diesel . . . many models of gasoline engines have similar mounting dimensions as diesel engines of like displacement.
- (4) Wide selection of fuels . . . HERCULES ENGINES operate efficiently on any popular fuel available, permitting the use of the most economical fuel in your area . . . gasoline, diesel fuel, natural gas, kerosene, L.P.G. and others.
- (5) Lightweight, heavy-duty construction . . . the excess metal that adds to engine weight has been eliminated . . . all 6 cyl. engines have 7 bearing Tocco hardened crankshafts, large precision-type bearings and full length water jackets are some of the extras which are standard on HERCULES ENGINES.

These are but a few of the features that make HERCULES ENGINES a better buy. For more complete information on the wide selection of Hercules Engines and Power Units, write for a copy of the folder, "Hercules Engines." This lists the many sizes of engines and their power ratings.



HERCULES ENGINES
 HERCULES MOTORS CORPORATION

40 Years of Engines for Industry

113 Eleventh Street, S. E. • Canton, Ohio

Circle No. 67 on Reader Service Card for more information

LOAD-CELL WEIGHING

Continued

of large industries. High speed weighing will require fast dissemination of information not only to local areas but also to remote points, which now suffer delays.

As a team, electronic weighing and telemetering will receive and transmit weight information to all points instantly, as fast as a circuit can be closed. Forthcoming improvements will occur at an accelerated pace. A combination of electronic weighing and telemetering will have a great deal to do in helping increase the speed and accuracy of industrial efficiency.

EARTH MOVERS . . .

(Continued from page 84)

Six big tractors and scrapers do the hauling. The operation looks almost like a road-building job.

Two crawler tractors work on top of the ore pile. Their dozer blades keep it level for the huge rubber-tired scrapers, which they also push for extra speed in loading. The old principle of the mold-board plow is employed on the scrapers. Their flat cutting edges bite into the ore, which rolls into the machine at the rate of about 23 cubic yards a minute.

Pittsburgh Conneaut uses another "earthmover" deep in the holds of lake ships. This machine, used widely by contractors for digging basements, is a crawler-type front end loader. It is dropped gently into almost empty ore carriers by a Hullett electric unloader. With its front-mounted shovel, the tractor cleans ore from sides and corners of the ship's hold, piling it for the unloader's clamshell.

Many other industries have already found material handling uses for all types of earthmoving machines. The discovery of further applications for earthmovers in industry promises to pay dividends not yet approached.

Photos and data courtesy Caterpillar Tractor Co. and Ohio Machinery Co.

DeLuxe built-in FEATURES CUT INSTALLATION EXPENSE by 50%

By built-in features we mean the components of **DeLuxe** steel shelving are made at our factory. This permits easy assembly without the tedious, time-consuming jobs found necessary in assembling ordinary shelving.

Your **DeLuxe** dealer and our design engineering and estimating department, without obligation, will be pleased to work up an installation to fit your requirement—and show you how you can save 50% of installation expense.

FREE

48 PAGE CATALOG

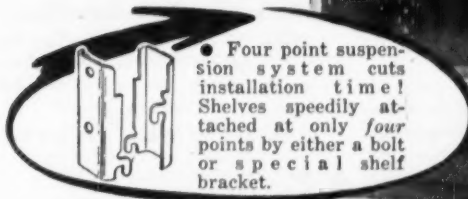
Here is the **DeLuxe** craftsmanship story . . . told in this 48-page fully illustrated catalog. Request your free copy.



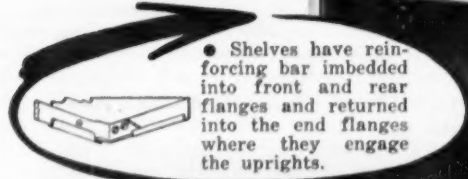
- Sets up quickly . . . utilizing sturdy one-piece I-Beam uprights.



- Combination floor angle and shelf support provides flanged bearing surface to distribute load equally over large floor area.



- Four point suspension system cuts installation time! Shelves speedily attached at only four points by either a bolt or special shelf bracket.



- Shelves have reinforcing bar imbedded into front and rear flanges and returned into the end flanges where they engage the uprights.

For over 25 years our plant has been particularly devoted to the mass production of quality shelving.



A division of Royal Metal Manufacturing Company

DELUXE METAL FURNITURE CO.

335

STRUTHERS STREET, WARREN, PENNSYLVANIA

Circle No. 41 on Reader Service Card for more information



in useful literature

These publications, written by experts, are available. Indicate your choice on the self-mailing Readers Service Card.

Mobilvan System Film:

Clark Equipment Company has made available prints of a motion picture on the Mobilvan System—a new method of transporting freight. Titled, "The Time Has Come", it has a screening time of slightly more than 15 minutes, has narration and music trail, and is offered at no charge.

Circle 166 on Reader Service Card

LP-Gas Data:

Factual data about the cost of operating internal transportation equipment on LP-Gas is contained in a booklet available from American Liquid Gas Corporation.

Circle 167 on Reader Service Card

Industrial Tires:

Release from The Notat Tire Company suggests how you can make your equipment pay good profits with Notat tires.

Circle 168 on Reader Service Card

Shovels and Cranes:

Link-Belt Speeder Corporation gives interesting news about shovels, draglines and cranes in the latest issue of its "News" magazine.

Circle 169 on Reader Service Card

Packaging Suggestions:

Ideas and practical suggestions for improved packaging and packing are contained in a publication obtainable from The Stanley Works.

Circle 170 on Reader Service Card

Battery Stories:

Case histories of two firms' use of Edison batteries are given in the latest issue of Storage Battery Power, available from the Edison Storage Battery Division of Thomas A. Edison, Inc.

Circle 171 on Reader Service Card

Bulk or Pallet Handler

Information on how the Load Luger is employed to handle bulk or pallets is given in a colorful brochure published by Brooks Equipment & Mfg. Co.

Circle 172 on Reader Service Card

Packaging Machinery:

More than 275 different types of machines are described in a 40 page, illustrated catalog published by Emhart Manufacturing Co. Automatic packaging and palletizing equipment are among the units detailed.

Circle 173 on Reader Service Card

Cab Operated Hoists:

Numerous photos and data on cab operated electric hoists are contained in a release available from Shepard Niles Crane & Hoist Corporation.

Circle 174 on Reader Service Card

Successful Automation:

A bulletin covering proved answers to successful automation is off the press from the Photoswitch Division, Electronics Corporation of America.

Circle 175 on Reader Service Card

Wheels and Casters:

A new type wheel is detailed by Neilson Wheel Company in a 28 page catalog covering the company's products.

Circle 176 on Reader Service Card

Opens Bags:

Tele-sonic Packaging Corporation has a release on a bag opening machine that operates by controlled air.

Circle 177 on Reader Service Card

Profitable Packaging:

Latest issue of Hinde and Dauch's package laboratory news contains many packaging and cost saving ideas.

Circle 178 on Reader Service Card

Panoramic Visibility:

A new fork truck with panoramic visibility and a single mast, is described in a colorful brochure by Hyster Company.

Circle 179 on Reader Service Card

Layout Tapes:

An eight page illustrated booklet covering layout tapes for industrial planning is offered by Labelon Tape Co., Inc.

Circle 180 on Reader Service Card

Excavator Dump Bodies:

Detailed information on the HD series heavy-duty excavator dump bodies is contained in a catalog sheet available from Hercules Steel Products Corp.

Circle 181 on Reader Service Card

50 Percent Less Handling:

How one company reduced bag handling time 50 percent is described in a brochure which may be obtained from Towmotor Corporation.

Circle 182 on Reader Service Card

Belt Idlers:

Heavy duty conveyor belt idlers are discussed in a comprehensive catalog available from Joy Manufacturing Company.

Circle 183 on Reader Service Card

Electric Vibrators:

Cleveland Vibrator Co. tells about its complete line of electric vibrators in a catalog available to you.

Circle 184 on Reader Service Card

High Speed Coupling:

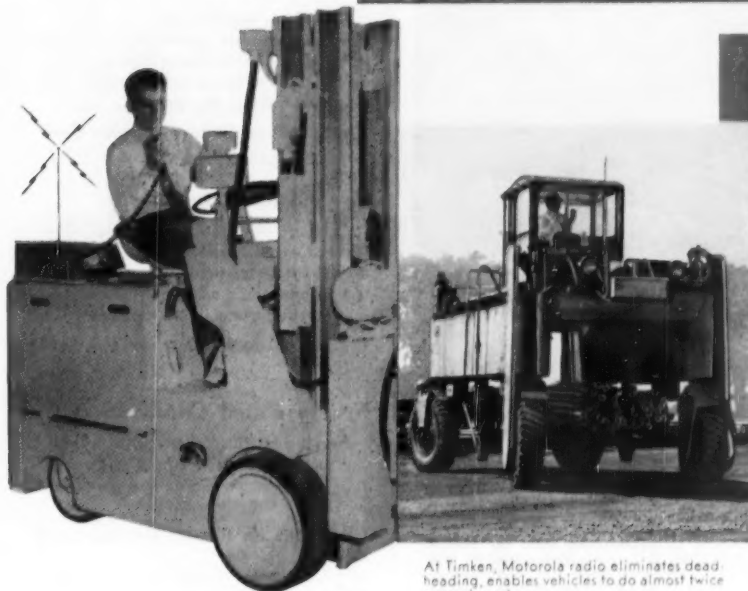
A new method of dynamic balancing is described by John Waldron Corporation in a release covering high speed couplings.

Circle 185 on Reader Service Card

KEEP MATERIAL HANDLING EQUIPMENT

On the move

WITH **MOTOROLA** 2-WAY RADIO



At Timken, Motorola radio eliminates dead-heading, enables vehicles to do almost twice as much work.



At Kaiser Steel, radio equipped engines get the steel to blast furnaces when it's needed.

small plant or large, **MOTOROLA** radio control will:

- increase productivity and reduce costs
- eliminate wasted "waiting"
- minimize expensive equipment "down time"
- eliminate double trips and dead mileage
- cut fuel and repair bills
- replace blind guessing with sharp dispatching
- increase safety of personnel
- tighten protection of entire plant

Often called the most important materials handling advancement since the unit load principle, 2-way radio slashes handling costs—not by a few percent—but *often* by as much as 50% or more. Motorola radio gets vehicles to the right place at *exactly* the right time, and when one job is completed, moves them *directly* to the next. The dispatcher knows where all vehicles are at all times—can pre-plan the flow of materials—change plans to accommodate rush jobs in seconds with radio.

Many other benefits are yours with a Motorola 2-way radio system. Records show that it pays

for itself within *months*. Motorola, the mobile radio pioneer and leader, produces the right 2-way radio equipment for each application . . . with more exclusive features . . . designed to stand up under the severest industrial application . . . and *proved to last longer*. Find out how thousands of industrial organizations are saving money every day and getting maximum use from their materials handling vehicles, with 2-way radio. A Motorola Communications engineer will give you the facts at your convenience. Write, phone or wire Motorola TODAY.

MOTOROLA

INDUSTRIAL 2-WAY RADIO

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.
A SUBSIDIARY OF MOTOROLA, INC.
4501 AUGUSTA BOULEVARD • CHICAGO 51, ILLINOIS
ROGERS MAJESTIC ELECTRONICS LTD. TORONTO, CANADA



Motorola consistently supplies more mobile and portable radio than all others combined.

Proof of acceptance, experience and quality.

The only COMPLETE radio communications service—

specialized engineering . . . product . . . customer

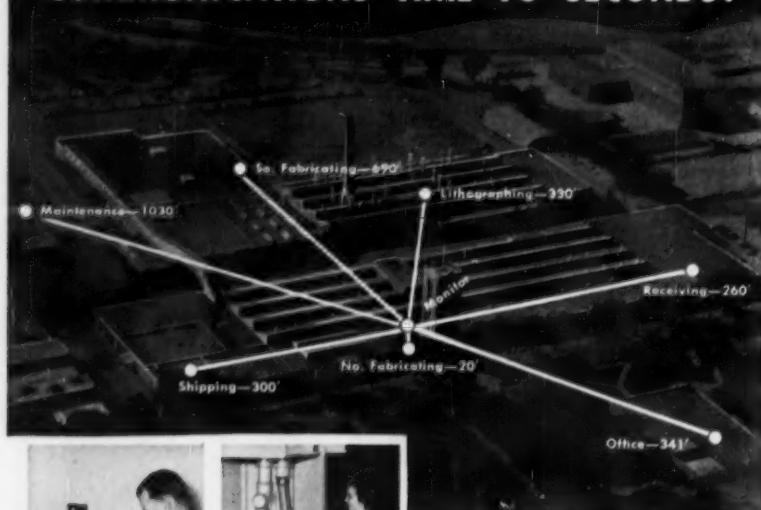
service . . . parts . . . installation . . .

maintenance . . . finance . . . lease.

"The best costs you less—specify Motorola."

Circle No. 97 on Reader Service Card for more information

LAMSON AIRTUBE AUTOMATIC SWITCH SYSTEM REDUCES COMMUNICATIONS TIME TO SECONDS!



The above photograph shows the locations of stations of the Lamson Airtube system and their distances from the monitor at the vast J. L. Clark Manufacturing Co., Rockford, Ill. Distances shown in air feet. Walking distances are much greater. Every carrier passes through the monitor . . . the automatic control switching point. The monitor automatically deflects the carrier into the tube leading to the correct station. The photographs at the left show typical Airtube stations in Office and Plant.

In 300,000 Sq. Ft. Plant!

Huge as the J. L. Clark plant is, Lamson's Airtube Automatic Switch System has brought the farthest departments only seconds away from each other.

Lamson has reduced hourly trips to merely 1 or 2 daily to handle bulky items. The handling of correspondence, time cards, instruction sheets, shipping schedules, receiving slips, memorandums and requisitions between departments has increased in speed and efficiency. Executives save valuable hours of "between office" time. Supervisors can devote more time to "on the job" supervision because they're freed from message carrying.

Lamson Airtube carriers . . . also bearing small product samples and tools . . . automatically discharge at any pre-determined station. The correct station number is dialed by turning the bands on the carrier.

For complete details as to how Lamson can improve the speed and efficiency of communications in your plant, MAIL THIS COUPON TODAY.



Plants in Syracuse
and San Francisco
Offices in Principal
Cities

Lamson Corporation,
2428 Lamson Street, Syracuse, New York
Please send me a free copy of "Lamson Airtube Automatic Switch System" Bulletin.

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Circle No. 80 on Reader Service Card for more information

Full Range Vision:

Unit Crane and Shovel Corporation's new model 510 Challenger is depicted in detail in a recently released brochure. Among features pointed out is full range visibility in the new safety cab.

Circle 186 on Reader Service Card

Electronic Tractor:

Literature available from Barrett-Cravens Company describes and illustrates the Guide-O-Matic tractor, which moves trailer trains to prescribed destinations without an operator.

Circle 187 on Reader Service Card

For Faster Production:

Catalog published by Standard Conveyor Co. tells about conveyors engineered for faster production. The literature shows equipment in use, and also tells about pneumatic tubes.

Circle 188 on Reader Service Card

Non-Insulated Conductors:

Non-insulated conductors for supplying mobile power to cranes and monorails are described in catalog published by Insul-8-Corp.

Circle 189 on Reader Service Card

Elevating Tailgates:

How Heil loader elevating tailgates can be installed on your trucks and save as much as 50 percent in time and money is described in literature available from The Heil Co.

Circle 190 on Reader Service Card

Hi-Power Batteries:

C & D Batteries, Inc. has released a catalog covering its new line of Hi-Power batteries for use in the control, switchgear, emergency lighting and auxiliary power fields.

Circle 191 on Reader Service Card

Automatic Bagging Scale:

A six page bulletin offered by Richardson Scale Company describes and illustrates the company's E-50 automatic bagging scale.

Circle 192 on Reader Service Card

Magnetic Transmission Equipment:

Detailed clutch and brake selection data including torque requirements, service factors, descriptions, features and dimensions are contained in a bulletin offered by Stearns Magnetic Inc.

Circle 193 on Reader Service Card

Lightweight Hand Trucks:

Magline Inc. has prepared a brochure which pictures and describes seven basic hand trucks which are said to give a maximum of performance with a minimum of weight.

Circle 194 on Reader Service Card

New Wheel-Mounted Tractor:

An eight page bulletin from the Le Roi Division of Westinghouse Air Brake Company describes the new 125 Tractor. The wheel-mounted tractor is said to have an unlimited number of applications.

Circle 195 on Reader Service Card

Yard Handling Equipment:

Copious photographs of wheel and crawler mounted cranes and shovels are contained in a catalog offered by Bay City Shovels, Inc.

Circle 196 on Reader Service Card

Hydraulic-Electric Tow Truck:

A 100 percent hydraulic-electric tow truck, designed expressly for multi-item loads, is detailed in literature published by Tow-Bear Division, Hudson House, Inc.

Circle 197 on Reader Service Card

Packaging and Carloading Guide:

Signode Steel Strapping Company has available a 44 page packaging and carloading guide which points out how you can speed packaging and shipping and also lower costs.

Circle 198 on Reader Service Card

Structural Framing:

Time-saving, space-saving and lower cost in structural framing can be accomplished with Tube-Strut, says Tubular Structures Corp. of American in available literature.

Circle 199 on Reader Service Card

Economical Pallet Loading:

How you can save time and manpower loading pallets is described by Production Devices, Incorporated, in a colorful brochure.

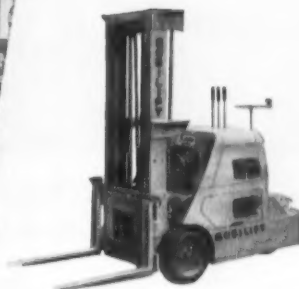
Circle 200 on Reader Service Card

Self-Sticking Tapes:

A four page illustrated brochure from Permacel Tape Corporation describes how self-sticking tapes save time, money and facilitate more efficient produce packaging.

Circle 201 on Reader Service Card

MORE AGILE... IN TIGHT CORNERS



The Only "Stand-Up" Gas Operated Lift Truck On The Market

The Mobilift "stand-up" fork lift truck speeds materials handling where handling is toughest—provides maximum return under these critical conditions.

1. Cramped quarters where top maneuverability is demanded.
2. Narrow aisles where storage space is at a premium.
3. Operations where driver is constantly on and off truck.

One step up and he's ready to go . . . faster and safer. He can turn Mobilift end-to-end without stopping . . . thanks to 360° steering. Lev-R-Matic controls and automatic safety brake provide easy and positive drive control of the truck at all times.

The driver enjoys safer operation with unobstructed "every-side" visibility. A high free lift for higher, easier stacking is standard.

Mobilift "stand-up" fork lift trucks range up to 3500 lbs. in capacity.

*Discover how you can save material handling
time and costs. Mail this coupon today.*

Lamson Mobilift Corporation
5008 Lamson Street, Syracuse 1, N. Y.
Please send me complete information on _____
Mobilift "stand-up" trucks _____ on Mobilift
"sit-down" trucks, on _____ all Mobilift trucks.
Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

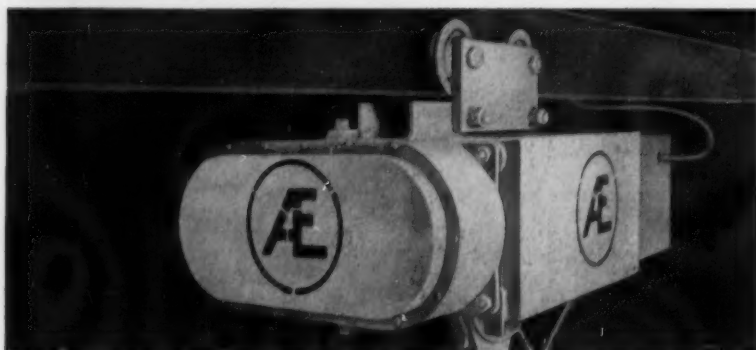


MOBILIFT CORP.
Home Office
Portland, Ore.
Offices in principal cities

Circle No. 81 on Reader Service Card for more information

FOR ROCK-BOTTOM HANDLING COSTS...

STANDARD LO-HED

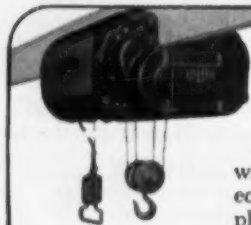


**Truly a STANDARD hoist...
ready for immediate delivery**

FOR A HOIST in the 2- and 3-ton range you'll get more for every dollar with AE's new heavy duty "Standard" Lo-Hed. This is a completely modern hoist; the last word in engineering and materials; quantity-produced; packed with extras at no extra cost.

"Standard" Lo-Hed's balanced design is tops for crane, monorail and stationary service...unmatched for simplicity and maintenance ease. Welded steel chassis combines rigidity and light weight. Straight line spur gear drive abolishes worm-wheels, extended shafts and split gear combinations. Lower limit safety switch is standard... no extra charge!

For economical materials handling, write for full information on the "Standard" Lo-Hed...or on the Customized Lo-Hed if you have special requirements. American Engineering Co., 2531 Aramingo Ave., Philadelphia 25, Pa.



FAMOUS CUSTOMIZED LO-HED

For lifts of more than 20 feet...for low headroom...for loads from 1/4 ton to 12 tons...a Customized Lo-Hed Hoist will bring you the same speed, efficiency and economy that have cut handling costs in plants from coast to coast.

AMERICAN ENGINEERING



COMPANY
Philadelphia 25, Penna.

Affiliated Engineering Corporations, Ltd., Montreal 16, P. Q.
Bowden Industries Ltd., Toronto 3, Ont.

AE Products are: Marine Deck Auxiliaries, Hole-Shaw and Hydramite Fluid Power, Lo-Hed Hoists, Lo-Hed Car Pullers, Taylor and Perfect Spread Stokers.



Circle No. 6 on Reader Service Card for more information

Quick Paying Truck:

An electric truck that is said to pay for itself in just a few months is described in literature from the Taylor Shop. The Taylorcart operates horizontally with operator and load.

Circle 202 on Reader Service Card

Steel Storage Equipment:

You can save time and space by properly planned storage says The Frick-Gallagher Mfg. Co., who offers an informative catalog on steel storage equipment.

Circle 203 on Reader Service Card

Magnet Applications:

Many industrial applications for magnetic conveyors are contained in an illustrated bulletin from Homer Manufacturing Co., Inc.

Circle 204 on Reader Service Card

Half-Ton Capacity Hand Truck:

A hand truck designed to let one man move as much as a half-ton is described in a bulletin available from U. S. Products, Inc.

Circle 205 on Reader Service Card

Food-Handling Belts:

Data sheet on a new line of food-handling conveyor belts has been published by The B. F. Goodrich Company Industrial Products Division.

Circle 206 on Reader Service Card

Motor Facts:

A multi-color 12 page booklet offered by U. S. Electrical Motors Inc. illustrates and describes numerous features of the new type H Uniclosed motor.

Circle 207 on Reader Service Card

Carton Clamp:

A hydraulic clamp attachment designed to handle a variety of loads with the use of pallets or skids is detailed in a bulletin offered by The Elwell-Parker Electric Co.

Circle 208 on Reader Service Card

Waterproof Tapes:

Polyethylene coated tapes are detailed in literature prepared by the Polyken Products Department of The Kendall Co.

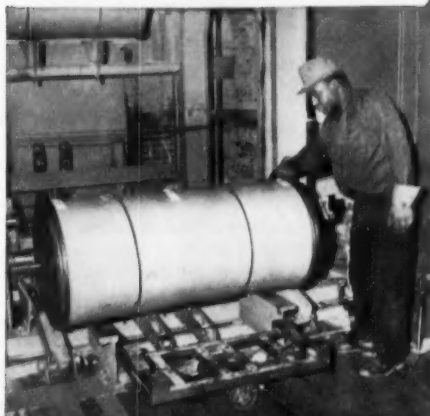
Circle 209 on Reader Service Card

Vibrating Conveyor:

Features of Gifford-Wood Company's Oscilveyor vibrating conveyor are pointed out in a four page bulletin.

Circle 210 on Reader Service Card

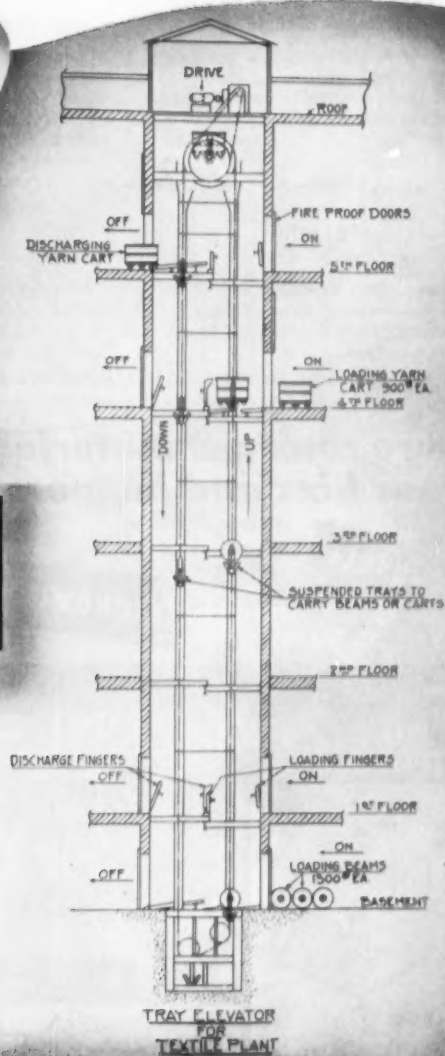
Beam being discharged at predetermined floor



**Only through Engineering...
...can efficiency be achieved**



Loaded box truck on way to desired floor



Firestone

**saves \$25,000 a year
with this G-W "Ferris Wheel"**

Moving 1300-lb. beams of rayon and 900-lb. box trucks in and out of freight elevators is a back-breaking job. Yet approximately 230 of these bulky loads must be lifted (and empties returned) every day at the Firestone Textiles Division of the Firestone Tire and Rubber Co., Gastonia, N. C.

This Gifford-Wood "Ferris Wheel"—a 6-story round-about tray elevator—has assumed most of the work load. Beams and trucks are automatically picked up on the loading side of a shaftway by trays suspended between two endless chains, carried to the top, eased over the drive

sprockets, lowered to the desired floor, and automatically discharged.

The \$25,000 annual saving is basically one of the reduced labor requirements and improved handling efficiency, and the limited manual work remaining is much less strenuous than formerly.

This is just one of many conveyors born of G-W ingenuity and experience—product of efficiency through engineering. Call on G-W Materials-Handling Engineers to survey your present methods; you are under no obligation. It might well prove to be a step toward higher profits through lower operating and maintenance costs.



Free!

Write today for G-W's fully-diagrammed Idea Book on engineered materials handling.

GIFFORD-WOOD CO.

Since 1814 • Hudson, New York

NEW YORK 17, N. Y.
420 LEXINGTON AVE.

ST. LOUIS 1, MO.
RAILWAY EXCHANGE BLDG.

CHICAGO 4, ILL.
545 W. WASHINGTON ST.

Circle No. 149 on Reader Service Card for more information

Straddle Dump Carrier:

Performance characteristics, construction details and engineering specifications of its new straddle dump carrier are contained in a four page brochure available from Clark Equipment Company.

Circle 211 on Reader Service Card

Magnets for Liquid Handling:

Literature from Eriez Manufacturing Company describes permanent magnetic Ferrotaps suitable for most all liquid handling pipelines.

Circle 212 on Reader Service Card

Easily Serviced Truck:

Because the Laher electric truck is automobile engineered it's beautiful, rugged and easily serviced, says Laher Mustang Mfg. Co. Inc. A colorful and detailed bulletin gives complete information on various models, including the personnel carrier and Trucker.

Circle 213 on Reader Service Card

Hoist Advantages:

Advantages of the Zephyr hoist are outlined in a bulletin available from Chester Hoist Division of The National Screw and Mfg. Co.

Circle 214 on Reader Service Card

Finger-Tip Control:

Hoisters Incorporated tells about the new, improved Hoist-O-Matic with finger-tip control, in picture and data sheet. The general purpose loading unit is said to be trouble-free, economical and efficient.

Circle 215 on Reader Service Card

Platform Trucks and Trailers:

Catalog published by The Colson Corporation shows pictures and specifications of a variety of platform trucks and trailers.

Circle 216 on Reader Service Card

About Roller Bearings:

A new self-contained cartridge roller bearing is described in literature available from Rollway Bearing Co.

Circle 217 on Reader Service Card

Adjustable Speed Drives:

Information regarding the principles and uses of Dynamic Eddy-Current adjustable-speed equipment is contained in a catalog offered by the Dynamic Division of Eaton Manufacturing Co.

Circle 218 on Reader Service Card

Hoist or Pull Unit:

Bulletin from Princeton Griphoist, Inc. tells about Tirlor, the portable, multi-purpose unit that will hoist or pull. The unit is said to be able to handle any height, distance, direction, position or job at any weight up to six tons.

Circle 219 on Reader Service Card

Engineered Conveyors:

Catalog published by Prab Conveyors, Inc. features engineered conveyors, and gives details on the company's four patented products.

Circle 220 on Reader Service Card

Center Control Truck:

Mercury Manufacturing Company has available a bulletin describing and illustrating the model 630 sit-down, center control fork truck.

Circle 221 on Reader Service Card

Vibrating Screen:

Brochure from Link-Belt Company pictures and describes the company's new horizontal vibrating screen.

Circle 222 on Reader Service Card

New Wheel:

Catalog released by Neilson Wheel Company tells about a new stub-axle wheel and points out its advantages.

Circle 223 on Reader Service Card

Assure constant material flow from your bins and hoppers with . . .

DEPENDABLE **SAFE** **ECONOMICAL** **QUIET**



PneuBin

Pulsating Panels

PneuBin is a new concept in material flow engineering. The PneuBin unit consists of steel-backed, neoprene, pulsating panels, strategically located on the inside walls of your present bins. Working off the plant's regular air supply, PneuBin is inflated and deflated in controlled cycles, causing the contents of the bin to be "positively displaced" and thus assures free flow of material through the discharge opening.

DEPENDABLE—PneuBin is on the job whatever the material flow problem. PneuBin's principle of "positive displacement" moves the bin contents, not the bin . . . assures constant, free-running material discharge. Depend on PneuBin to insure material flow.

SAFE—No manpower is needed to facilitate material flow from bins when PneuBin is on the job. No more prodding, poling or sledge-hammering. Depend on PneuBin to insure material flow . . . safely.

ECONOMICAL—PneuBin cuts maintenance costs, saves money year after year. Reduce bin damage . . . increase bin life. Depend on PneuBin to insure material flow . . . safely, economically.

QUIET—PneuBin pulsating panels breathe . . . not snore. No hammering or loud vibration noises. PneuBin's quiet operation adds to overall plant efficiency . . . reduces employee fatigue. Depend on PneuBin to insure material flow . . . safely, economically, quietly.

Send for "Flow Stoppage" and free literature. PneuBin engineers will gladly make recommendations with no obligation on your part.

PneuBin A PRODUCT OF
GEROTOR MAY CORPORATION
1523 Maryland Ave., Baltimore 3, Maryland

Circle No. 57 on Reader Service Card for more information

Less Idle Time

WITH

MOTO-TRUC*



* To make an investment in a lift truck is one thing . . . to make it pay is another. The amount of idle time logged against a truck is a major factor in whether a truck is "paying its way."

MOTO-TRUCS offer LESS Idle time because of simplified operator controls. Their patented Roller Grip Controls make it easy for practically anyone in your plant to operate the truck . . . and remember . . . There's a MOTO-TRUC for every purpose.



Simplified Roller Grip Controls



Send for
Bulletin No. 54



The MOTO-TRUC Co.

Representatives in Principal Cities

1955 E. 59th St. • Cleveland 3, Ohio
Pallet . . . Platform . . . Hi-Lift Trucks
LARGEST EXCLUSIVE MANUFACTURER
OF "WALKIES"

Circle No. 98 on Reader Service Card for more information

AUGUST, 1955

135

Unitizing Methods:

Signode Steel Strapping Company has published a booklet containing six basic ways of unitizing. Unitizing will let you move more material in less time and more economically, according to the literature.

Circle 224 on Reader Service Card

Task-Tailored Trucks:

Towsley Trucks, Inc. has prepared a colorful catalog on what it calls task-tailored trucks. Included in the literature are platform trucks, two-wheel hand trucks and skids.

Circle 225 on Reader Service Card

Vacuum Systems:

Use of air pressure and vacuum systems in moving sugar is described in a reprint of an article entitled "Pneumatic Conveying of Sugar" offered by the Fuller Company.

Circle 226 on Reader Service Card

Doubles Truck Delivery:

Bulletin released by Daybrook Hydraulic Division, L. A. Young Spring & Wire Corporation, points out the superiority of its power gate, said to cut operating costs and double truck delivery.

Circle 227 on Reader Service Card

Pulpwood Films:

Advantages and functions of wood handling with the Model SC-180 Pulpwood Loader are shown in a new sound film available from Hyster Company.

Circle 228 on Reader Service Card

Crane Manual:

A 32 page book, designed as a convenient reference manual by Moffett Engineering Company, describes a wide variety of overhead cranes.

Circle 229 on Reader Service Card

Limit Switches:

Complete buying and installation information on Loxswitch limit switches is available in file folder form from R. B. Denison Manufacturing Company.

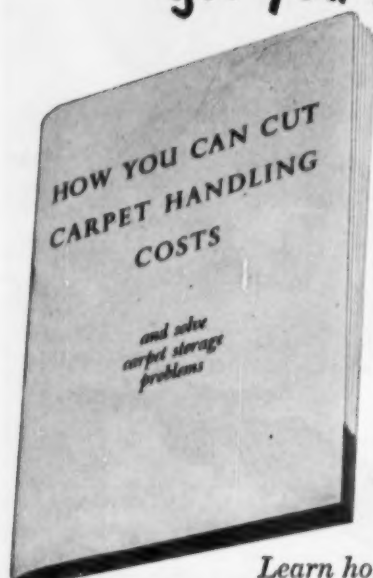
Circle 230 on Reader Service Card

Tailor-made Papers:

Popular types of Glassine and Greaseproof papers are displayed in a handy sample book offered by the Glassine & Greaseproof Manufacturers Association.

Circle 231 on Reader Service Card

Don't let CARPET HANDLING get you down!



Write for
this FREE BOOK!

Learn how you can...

Lower labor costs! Expand capacity! Eliminate cut-order
bottlenecks! Profit with present equipment!

Modernize at less cost! Get pushbutton results!

And much more!

SEND FOR YOUR FREE COPY TODAY

THE EASIQUIP COMPANY

1522 N. Indiana Street, Los Angeles 54, Calif.

Please send my free copy of "How You Can Cut Carpet Handling Costs"

INDIVIDUAL

FIRM NAME

STREET ADDRESS

CITY ZONE STATE



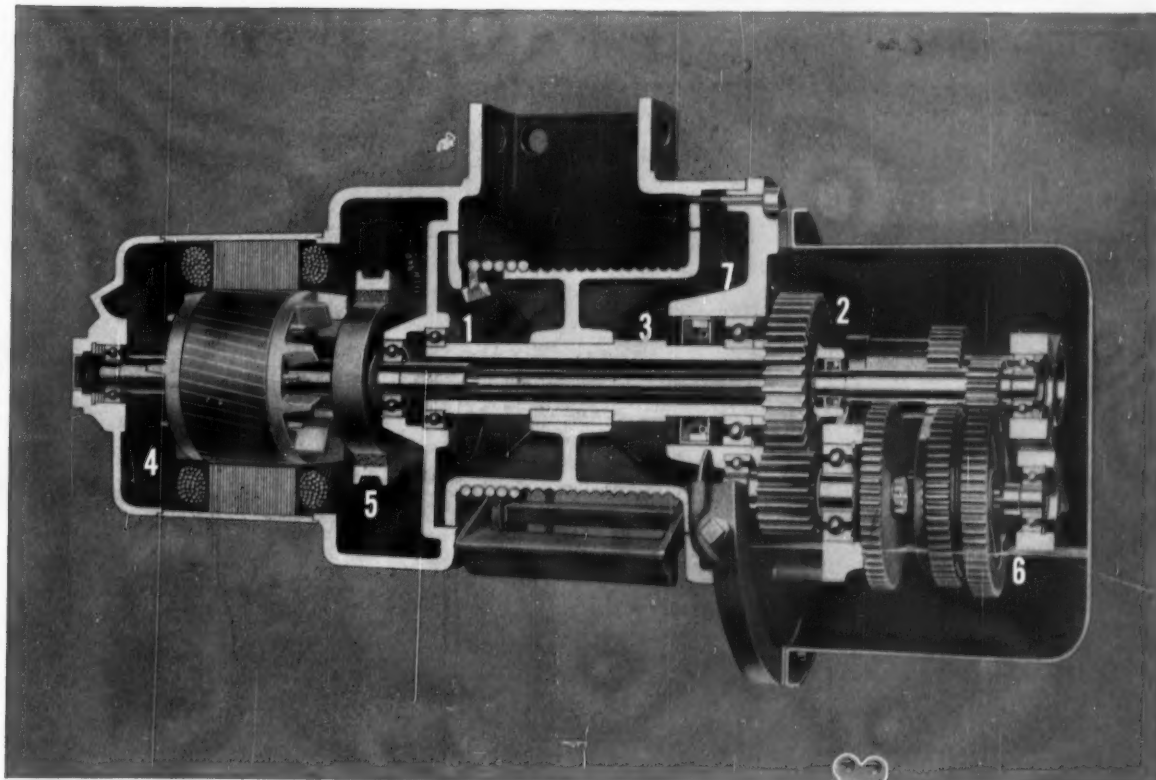
Circle No. 43 on Reader Service Card for more information

HALL HEADS AMHS



J. Wellington Hall

National president of the American Material Handling Society for 1955-56 is J. Wellington Hall of Kenilworth, New Jersey. Elected by the board of directors, meeting in Cleveland, Ohio, June 11, Hall was installed in ceremonies which included oaths spoken by re-elected First Vice President Harvey L. Bouwkamp; Second Vice President Frank G. LaTour; Secretary Herbert S. Jones; and Treasurer Charles J. Schroeder. Outgoing President Douglas A. Gillespie was presented a life membership card.



'BIG HOIST' QUALITY WITH 'SMALL HOIST' ECONOMY

A quick look at the Robbins & Myers "J" Hoist shows you the high degree of engineering and manufacturing precision that makes them so durable. The "J" Hoist, at prices competitive with the lowest, can give your handling problems a lift. Features like the following pay off in long service:

- 1—BEARINGS** Nine oversize ball bearings; sealed bearing in hook block.
- 2—GEARS** Wide faced, precision cut, heat treated for tough service.
- 3—SHAFTS** Precision ground high carbon or alloy steel.
- 4—MOTOR** Specially built by R & M for hoist duty; 30 min., 55° C.
- 5—MOTOR BRAKE** Oversize shoes for long life, quick stops, no drift.
- 6—LOAD BRAKE** Weston-type, runs in oil bath.
- 7—FRAME** Single unit, aluminum alloy, ribbed for extra strength.

"J" Hoist capacities range from 500 to 4000 lbs. Prices start at \$268.



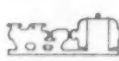
Bring your R & M hoist data files up to date. Send for free bulletin.

☐ Send Bulletin 851-B

☐ Have representative call



VENTILATORS



MOTOR PUMPS



HOISTS



CRANES



MOTORS



FANS

ROBBINS & MYERS INC.

SPRINGFIELD, OHIO

BRANTFORD, ONTARIO

Circle No. 111 on Reader Service Card for more information

360° hoist hook service...



WITH -

**AMERICAN
MONORAIL**

PEDESTAL JIB

Here's the answer to economical local handling service to process machines, particularly beneath heavy mill type cranes... it's the American MonoRail Pedestal Jib.

These jibs are recommended for capacities between 500 to 4,000

pounds, headroom 9 and 12 feet, and

boom length 8 and 12 feet... a truly

precision built, skillfully engineered job.

Turn to American MonoRail for any overhead handling requirements. Your American MonoRail

engineers will be glad to consult with you.



AMERICAN

OVERHEAD
HANDLING
EQUIPMENT

MonoRail COMPANY

13129 ATHENS AVENUE • CLEVELAND 7, OHIO

[IN CANADA—CANADIAN MONORAIL CO., LTD., GALT, ONT.]

Write for Bulletin PJ-1
For Continuous Flow of Light Loads
Use Landahl Chainless Conveyors

Circle No. 8 on Reader Service Card for more information

flow's EQUIPMENT & SUPPLIES SECTION

To serve you better . . .
. . . another FLOW innovation

Here, for the first time, is a full section devoted to news about the latest designs and construction of all types of equipment and supplies—grouped together for easy reference by men responsible for material handling, packaging and shipping. This section will be a regular FLOW feature.

To obtain complete information on any items which appear on the following pages, simply circle the appropriate numbers on the convenient, free-mailing Reader Service Card bound into this issue, pages 33 and 34, and send it to FLOW. Your inquiries will be answered immediately.



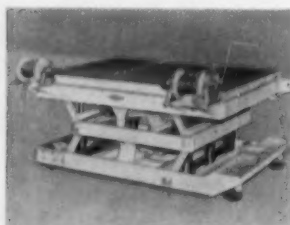


HANDLES TWO SKID LOADS SIMULTANEOUSLY

Skids can be handled twice as fast with dual lift platform truck, because it transports two skids simultaneously. The 4000 pound capacity truck has two independently operating platforms which can be separated to a maximum vertical distance of 62 inches. The upper platform fits over the lower one in its lowered position, giving the appearance of a single platform truck. Each platform can handle a 2000 pound load.

Yale and Towne Manufacturing Co.

Circle 232 on Reader Service Card

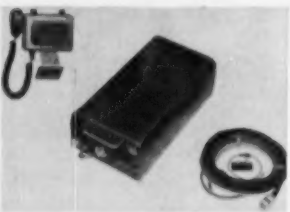


DIE HANDLING TABLE

A 30,000 pound capacity hydraulic table for handling of big dies, 65 inches wide by 96 inches long, with special heavy duty rollers set in three banks so dies can be drawn from the long side. Range of elevation is 16 inches, for presses with bed heights from 29 1/4 inches to 45 1/4 inches. The unit is portable, but may also be pulled by tractor or overhead crane. A 96 to 1 ratio double drum winch makes it possible for one man to pull the heaviest dies from a large press, according to the manufacturer.

The Raymond Corporation

Circle 233 on Reader Service Card



TWO-WAY RADIO SYSTEM

Especially designed for material handling vehicles is this low-power two-way radio system. Known as the Car-

fone-150, it incorporates both mobile units and base station equipment, with three-watt input, for operation over the entire 148-to-174 megacycle band.

Radio Corporation of America

Circle 234 on Reader Service Card



CONVEYOR TOW TRUCKS

A new line of conveyor trucks, for overhead or in-floor towing, has been developed by this company. Truck frames are fabricated of 3/16 inch formed plate bolsters and side sills welded into a one-piece unit. Decks are kiln-dried hardwood. Platforms are 32 inches wide and are available in 40, 48 or 54 inch lengths. Angle racks, extending 37 inches above the platform, are equipped with blackboards and tubular bill pockets.

The Colson Corporation

Circle 235 on Reader Service Card



ATTACHMENT IMPRINTS CONTAINER TOPS

Compact solenoid-operated micro-switch-activated machine for imprinting contents descriptions, varieties, code dates and other identification legends on tops of cans, cartons, boxes as well as certain types of products. Designed to place sharp, clean and consistently uniform imprints on packages, and to locate or register positions with extreme accuracy. Known as the Gottscho "Model 722" Rolaprinter, the machine is unusually small and space-saving. It can be readily mounted in idle space on an existing packaging or production machine or on a conveyor line.

Adolph Gottscho, Inc.

Circle 236 on Reader Service Card



ELECTRIC VEHICLE "AUTOMOBILE ENGINEERED"

Said to be the only electric vehicle completely automobile engineered. All parts, including wheels, easily removable for quick maintenance. Offered as exclusive is full elliptic spring suspension on all wheels. Six Laher Dynamic batteries supply energy for more than 12 hours of operation, and recharging is accomplished by plugging into any 110 volt line. Speeds range from 1 to 18 mph, with no loss or reduction of power, according to the manufacturer.

Laher Mustang Mfg. Co. Inc.

Circle 237 on Reader Service Card



COLORLED TYING WIRE

A colored vinyl coating on round steel strapping is said to improve product identification and package appearance, and to provide the strapping itself with high resistance to rust. The coating is elastic and has a smooth surface. Coated wire may be tied in standard machines without danger of chipping, peeling or stripping, according to the manufacturer. Available in red, yellow, blue and green in 17 and 18 gauges.

Inland Wire Products Co.

Circle 238 on Reader Service Card



SWEEPER WITHOUT DUST BAG

This power sweeper has no dust bag to empty. New design principle de-



Push a button — walk
along and you easily
lift and move 1000 lb.
loads with the ...
Walkie-Worklifter

**Performance
Guaranteed**



**In between your hand trucks and your big
lift trucks there's a place in your plant for a Walkie-Worklifter**

Maneuvers a 1000 lb. load easily in narrow aisles. Total loaded weight less than a ton. Can be used on any freight elevator and where floor-load limit prohibits heavy power trucks. No special trained operator needed. Any one can use the Walkie-Worklifter. Low first cost, only \$1148.00 for 60" lift platform models.

Many models of the Walkie-Worklifter are avail-

Quick Facts

Walkie-Worklifter lifting capacity 1000 lbs. Welded structural steel construction — Batteries and built-in charger included.

Standard models will pass through doorways and turn sharp corners in narrow aisles.

A safety feature — just let go the handle and it stops itself on the spot with automatic brake.

Standard platform models have 60" lift — telescopers up to 110". Straddle type fork models with lift up to 108".

able. Straddle-base telescopers with a lift of 108 inches. Narrow platform model for handling tote boxes. Fork lift models for pallet stacking. Or a special can be built to fit your special job. Our representative will recommend money-saving applications for your particular requirements.

Phone today at our expense, or mail coupon for prompt personal service.

ECONOMY ENGINEERING CO. (Est. 1901)

4524 W. Lake St., Chicago 24, Ill., Phone EStebrook 8-9110

Eastern Sales Office: 342 Madison Ave., New York 17, N. Y.,
Phone: Murray Hill 2-8940 • Representatives in all principal cities

ECONOMY ENGINEERING CO., Mr. Carl Rhodes,
4524 W. Lake St., Chicago 24, Ill.

- ☐ Would like to see representative
☐ Mail copy of bulletin

MY NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

Circle No. 85 on Reader Service Card for more information

posits fine dust into the main hopper automatically. Incorporates automotive-type steering, and will sweep close to walls and equipment. Maximum sweeping coverage is more than 100,000 square feet per hour.

Wayne Manufacturing Co.
Circle 239 on Reader Service Card



HANDLES ROLLS

A pallet-type roll handling truck introduced to solve the problem of cylindrical loads. The electric walkie truck's forks are heavy duty concave members made to straddle drums, reels, cylinders, paper rolls, etc. Various fork widths and lengths are available.

Automatic Transportation Co.
Circle 240 on Reader Service Card



DRUM MIXER

A machine that will thoroughly and completely agitate and mix a drum or barrel of liquid, and some dry substances. Moves drum circumferentially and oscillates longitudinally while being rotated. Will handle either 55 gallon or five gallon drums.

Lansing Industrial Sales Co.
Circle 241 on Reader Service Card

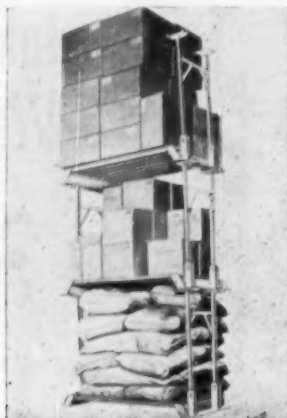


LIGHT DUTY PLATFORM TRUCK

A platform truck suitable for all light duty work. Called the Model A-209MD, it has a capacity of 1500 pounds and can be equipped with tow-line attachments for both overhead and in-floor conveyor lines. Deck and longitudinal channel sides are formed of 12 gauge sheet steel with two inch

channel iron providing intermediate support. Standard deck size is 32" wide by 72" long by 12" high. It is equipped with 8- by 2-inch rubber tired wheels.

Mercury Manufacturing Co.
Circle 242 on Reader Service Card



LOCKING DEVICE ADDS SAFETY

A U-bolt locking device has been incorporated on the Multi-Stak pallet stacker. Primary purpose of the U-bolt is to lock upright posts or standards into three contact points for added safety and rigidity. A unique feature permits the standards to be locked for either temporary or permanent use. When U-bolts are released, standards on the Multi-Stak fold flat for compact storage. In the Dubl Duty units the standards are removed.

Elizabeth Iron Works, Inc.
Circle 243 on Reader Service Card



EXPEDITES MEN AND MATERIALS

A new gasoline industrial maintenance truck designed to expedite the movement of men and materials with maximum speed, maneuverability, reliability and economy. The truck measures 10 feet long by three feet, six inches wide. It can transport four men plus an operator at speeds up to 15 mph; is equipped with four fitted compartments, acetylene welding equipment, extendable magnesium ladder, fire extinguisher and red caution lights.

Kalamazoo Manufacturing Co.
Circle 244 on Reader Service Card



INCREASED CAPACITY IN NEW TRACTOR-SHOVEL

Latest model of the new line of "Pay-loader" tractor-shovels has two cubic yard capacity. Called the "HO", it has the same innovations recently introduced on the "HU" (1 cu. yd.) and "HH" (1½ cu. yd.) units—"pry-out" action, 40 deg. "breakout" at ground level, improved visibility and safety for the operator. An advancement in the "HO", however, is the incorporation of a newly developed "Power-shift" transmission. It eliminates the clutch pedal and allows all shifts through all speed ranges, in both forward and reverse, without stopping or slowing down the equipment. The Frank G. Hough Co.

Circle 245 on Read Service Card



TELESCOPING CONVEYOR HAS MANY COMBINATIONS

Telescoping units in five types of wheel conveyor with 48 different combinations. They consist of two, three or four 5- and 10-foot sections. Lowest height is two-feet, with high end varying according to length and number of sections used. Widths of 10- and 16-inches are available, with 10, 12, 16 or 20 wheels per foot. Units are said to be ideal for loading and unloading trucks and boxcars, or general warehouse use.

Mathews Conveyor Co.
Circle 246 on Reader Service Card



MINE LOCOMOTIVE

A new line of mine locomotives called the Plymouth Mine-O-Motive is offered in sizes from five to ten tons. The units have been fully tested and approved for

underground operation. Suitable scrubbers and exhaust conditioners are offered on all models, along with diesel-torque converter drive.

The Fate-Root-Heath Company

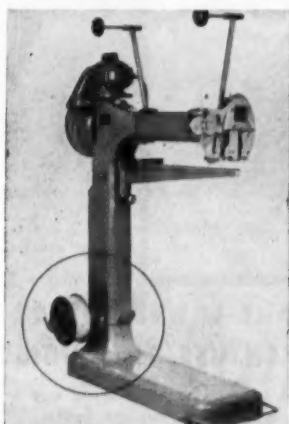
Circle 247 on Reader Service Card

ECONOMICAL TRUCK

An electric personnel carrier designed for efficiency, economy and dependable handling. Called the Taylorcar, it can carry four persons, or two persons and 400 pounds cargo. It has a sturdy all-welded frame and fibreglass body, and is said to cost only a few cents a day to operate. Also available is a ½-ton and ¾-ton truck.

Taylor Manufacturing Co.

Circle 248 on Reader Service Card

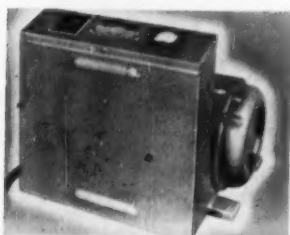


MACHINE MOUNTED COIL HOLDER

Wire stitching machine operations are said to be markedly improved by a new 50 pound coil holder which can be mounted on a stitcher. Designated as the Model PIC, the new coil holder was developed for single-head and double-head box stitchers to allow longer stitching runs and shorter stops to re-load. The controlled brake is self-adjusting so wire feeds more easily and smoothly from the holder. The brake is released and applied gradually. It is completely disengaged when the reel turns, thus reducing the load on the wire feed mechanism and virtually eliminating brake friction while the wire is feeding.

Acme Steel Co.

Circle 249 on Reader Service Card



NEW SINGLE CIRCUIT CHARGER

Model KXM charger recently introduced is a single circuit unit, especially

designed for servicing high capacity batteries used in driver-ride electric trucks. The charger provides industry with a basic unit for charging batteries of different types and capacities, according to the manufacturer. It is delivered as a complete package with the motor-generator and control cabinet mounted together ready for installation.

Hertner Electric Co.

Circle 250 on Reader Service Card

HEAT-IMPULSE PLASTIC SEALER

Arranged to leave both hands free for accurate positioning of plastic products being sealed, the Model 354 Ectomag Magnetic Bar Heat-Impulse Sealer uses

magnetic closing of a hinged pressure bar to provide: (1) secure clamping against side pull on the forming seal, and (2) uniform pressure from seal to seal. Standard seal length is nine inches, but special units can be supplied for longer seals. Sealer has a foot-pedal arrangement which closes a hinged pressure bar to a ¼-inch opening, at which point a limit switch closes actuating completion of an automatic cycle. The pressure bar is firmly closed by the Ectomag Magnetic bar, an adjustable automatic time is actuated which controls and terminates the impulse heating cycle, releasing the finished product.

Electronic Processes Corp.

Circle 251 on Reader Service Card

for the smooth profitable flow of materials

**resilient select elm slats
bound with heavy gauge wire
hardwood dovetailed frame
heavy steel corner irons**

Representatives near you to provide helpful service

Stacking Box

Skid Box

Box Truck

Masonite Box Truck

Folding Box

LEWIS
INDUSTRIAL CONTAINERS

G. B. LEWIS COMPANY
6005 Montgomery St., Watertown, Wis.

Circle No. 82 on Reader Service Card for more information



GRIPPER

WOVEN WIRE

SLINGS

GRIP BETTER • LAST LONGER
REDUCE LOAD DAMAGE
INCREASE SAFETY

GRIP BETTER—Gripper Woven Wire Slings are completely flexible . . . grip better because they wrap all around your load and provide an extra broad bearing surface, in either **BASKET** or **CHOKE HITCH**.

LAST LONGER—All-Metal construction means long life, freedom from damage even by sharp edged loads. Special alloys are available for use where high resistance to corrosion or heat is required.

REDUCE LOAD DAMAGE—The flat bearing surface will not cut into or score material being handled because Gripper Slings bend across their width. Better grip prevents shifting of the load.

INCREASE SAFETY—Gripper Slings will not kink or tangle . . . loose ends do not cause dangerous whipping or snarling. Smooth woven wire construction eliminates sharp loose strands. Every sling **PRETESTED** to meet loading specifications.

GRIPPER Woven Wire SLINGS are available in standard lengths and widths . . . and capacities up to 100,000 lbs. Special sizes on request. See your materials handling, mill supply or safety equipment distributor. OR, write direct for **FREE** catalog and name of nearest distributor.



The Cambridge Wire Cloth Co.

Dept. W • Cambridge 8, Md.



WIRE CLOTH METAL CONVEYOR BELTS SPECIAL METAL FABRICATIONS

OFFICES IN PRINCIPAL INDUSTRIAL CITIES

DISTRIBUTORS—write for open territory detail

Circle No. 29 on Reader Service Card



TRUCK INCORPORATES CONVEYOR UNIT

This side loading and unloading attachment makes it possible to place material in racks and remove it without turning the truck in the aisle. It combines a power-driven conveyor and a side-shifter. Unit loads up to 70 inches long by 24 inches wide can be handled by the truck. The rubber covered rollers are hydraulically driven, as is the side-shifter which moves the conveyor seven-and-a-half inches either side of center.

Lewis-Shepard Products Inc.

Circle 252 on Reader Service Card



TRANSPORTS HEAVY LOADS

Movement of heavy loads of raw materials or finished products can be accomplished with this portable bar stock carrier. The four foot wide by eight foot six inches long unit is of all-welded steel construction, with a heavy-duty tow bar welded to the base. It is equipped with two 12 inch rubber tired wheels and four rubber tired casters, all ball bearing. Capacities up to 20 tons are available.

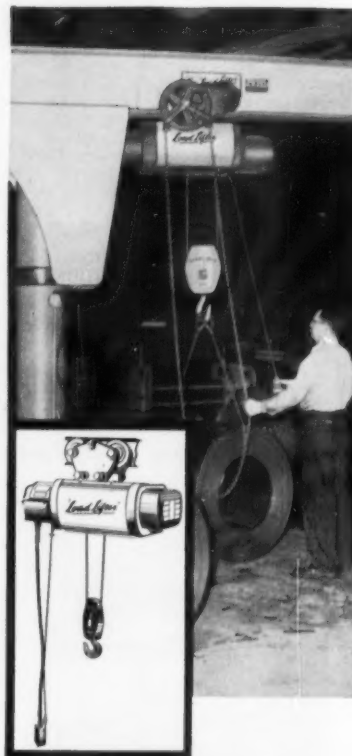
Rack Engineering Company

Circle 253 on Reader Service Card



FOLDING STEP LADDER

The convenience of easy fold-up action has been added to the latest model



WANT LOWER COSTS? THEN USE THIS HOIST!

Step up load-handling speed and save money doing it. Put the Series "700" 'Load Lifter' Electric Hoist to work. It lifts a 1-ton load one foot in only 2 seconds! You get more lifts per hour.

The Series "700" 'Load Lifter' is safety-engineered to protect man, load and hoist. Only 24 volts at the push buttons! The load and motor brakes are synchronized: each, alone, can hold the full load. Steel suspension, overcapacity load hook, preformed non-rotating wire rope—all contribute to the super-strength of the 'Load Lifter.'

The Series "700" 'Load Lifter' has few parts. There's extra durability in the heat-treated helical gearing; extra-smooth operation because ball bearings are used throughout. Reliable performance assured! Capacities from 1/2 ton up. Single and two-speed control. Let the nearby "Shaw-Box" Distributor show how this rugged hoist can cut your load-handling costs. Or write direct for Bulletin 410.



'Load Lifter'

ELECTRIC HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and "Load Lifter" Cranes, "Budgit" and "Load Lifter" Hoists and other lifting specialties. Makers of "Ashcroft" Gauges, "Hancock" Valves, "Consolidated" Safety and Relief Valves, "American" and "American-Microsen" Industrial Instruments, and Aircraft Products.

Circle No. 89 on Reader Service Card

FLOW (EQUIPMENT & SUPPLIES SECTION)

Safety-Step ladders. New three-step aluminum unit is equipped with retractable ball bearing casters, and is said to be ideal for countless jobs requiring the handling ease and versatility of a lightweight folding ladder. Casters retract automatically when weight is placed on steps. Sturdy handrails and non-slip corrugated rubber tread steps give added safety and support.

Ballymore Company

Circle 254 on Reader Service Card



MAGNESIUM WAREHOUSE-BAG TRUCK

A 1000 pound capacity hand truck for moving bags, sacks, cartons, etc. The truck is designed to stand upright, with or without a load, and tips forward slightly during loading, lifting both wheels off the floor. This feature prevents the truck from rolling, even on inclines, according to the manufacturer. Basic construction is magnesium throughout, with a nose plate of steel for added stability. Wheels are equipped with hub caps, and all bolts are countersunk.

Magline Inc.

Circle 255 on Reader Service Card



OPERATES IN 28 INCH AISLES

This battery operated hydraulic lift will operate in 28 inch aisles, has a maximum lifting speed of 40 fpm to a height of 56 inches, and a load capacity of 1000 pounds. Called the Challenger, unit is said to be low priced due to mass production technique.

Big Joe Manufacturing Co.

Circle 256 on Reader Service Card

FAST SHELVING INSTALLATION

Fastest installation of any high-strength storage shelving is provided by the new Klip-Bilt boltless steel shelving, according to the manufacturer. All fastening is with simple clips, requiring no tools or special skill. The clips can be readily removed to permit easy rearrangement or disassembly of shelving. Consisting of hardened cadmium-plated threaded stud and two heavy formed steel clips, Klip-Built shelf clips automatically accommodate variations in T-Post thicknesses so shelves are always gripped pressure tight. A complete range of sizes and parts is available.

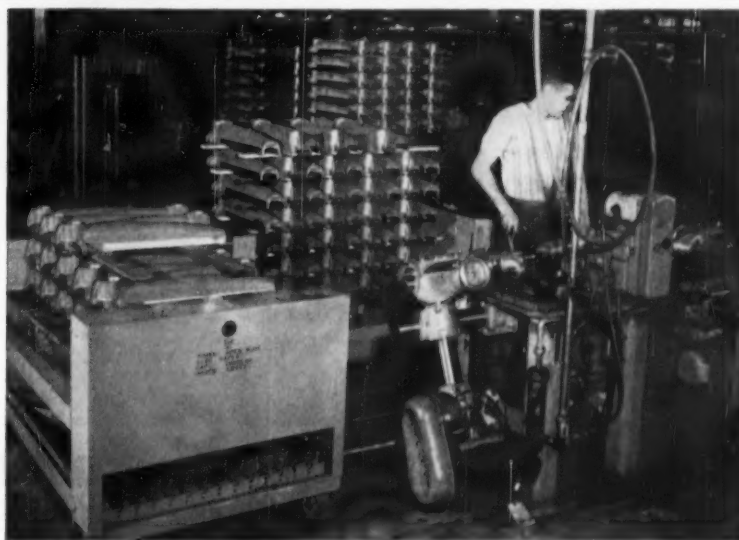
The Frick-Gallagher Mfg. Co.

Circle 257 on Reader Service Card



CUSHIONING NOMOGRAM

A cushioning nomogram now tells a shipper the exact thickness of Celotex cushioning material which is required for a specific shipment. Essentially, the Nomogram is a large sheet of paper with columns of figures. By using the data, a person can determine the neces-



"We maintain a constant and higher rate of production with LOWERATORS..."

says Edward Forth, Plant Supt., De Walt Inc., Lancaster, Pa.

"Because mobile AMF Lowerator Self-Leveling Work Positioners keep radial arm saw castings always at a constant work level, our multiple drilling machine operators are able to maintain a constant and higher rate of production.

"They don't have to stoop, bend or reach for parts, so they work steadier and are not fatigued at day's end."

Standard or custom-built AMF Lowerator models are available in a wide range of size and weight capacities. Mail coupon below for folder containing complete information.



Lowerator Division
American Machine & Foundry Company
261 Madison Avenue, Room 18, New York 16, N. Y.

Please send me a copy of your folder, L-131, showing how AMF Lowerators help solve work-positioning problems.

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____
(Please attach to business letterhead and mail)

Circle No. 7 on Reader Service Card for more information

Circle No. 117 on Reader Service Card for more information

RENT OR BUY
SILENT HOIST
LIFTRUK
on the
**"DAY-BY-DAY
EARN-ITS-WAY
PLAN"**


**3-5-7½-10-15 ton
CAPACITIES**




If you can reasonably use a Heavy Duty LIFTRUK for at least two hours a day average, to improve the movement of goods in process or reduce materials handling operations, then you should be interested in this unusual "rent-or-pay-as-you-use" plan. Proper cost accounting methods often show that man-hours saved, storage space gained, or time in transit reduced, add up to a profit well above the payments required for LIFTRUK for purchase or rental charges.

Write for "Earn-Its-Way" Plan to

Exclusive
**FLUID
DRIVE**



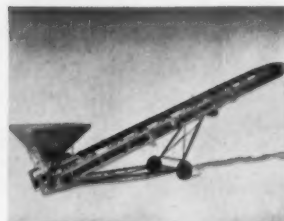
SILENT HOIST & CRANE CO.
Pioneer Mfrs. of Heavy-Duty Materials-Handling Equipment
888 63rd Street, Brooklyn 20, N. Y.



sary thickness of the Celotex material needed for an individual packaging job. The technique is said to be so simple that a non-technical person can use it with ease. Instructions accompany the Nomogram. Developed for the Celotex Corp. by Container Laboratories, Inc., Chicago, the Nomogram is an outgrowth of an earlier version designed for the Navy. (See FLOW, August, 1954, page 110).

The Celotex Corp.

Circle 258 on Reader Service Card



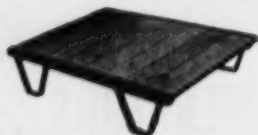
BULK HANDLING CONVEYOR

Troughed belt conveyors for bulk materials are available from this manufacturer in sizes from 18 to 36 feet. As much as 60 tons per hour may be handled. Either gas or electric power may be supplied for both bulk and bagged materials.

Chantland Mfg. Co.

Circle 259 on Reader Service Card

In production or in storage IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid built to handle loads up to 5 tons.



Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.



Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!



IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
30 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PLY BARS

Circle No. 72 on Reader Service Card for more information

SAVED...

45%
Storage Space

20%
Handling Time!*

Truly Adjustable Patented
PALLET RACK
with the Boltless Shelf

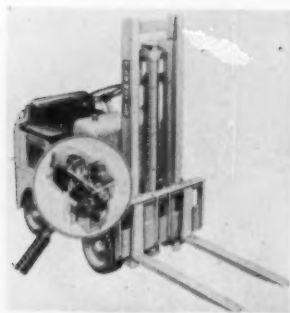
Take advantage of the savings these Racks make possible in handling and storing all types and sizes of parts, products, supplies, etc. Adjusts to any size opening on 4" centers. Low cost. Quickly erected.

*Case study on request.

Write for Complete Data!

RACK **ENGINEERING COMPANY**
131 Sixth Street Connellsville, Pa.
GARDENA, CALIF. • FARNHAM, QUE. • LONDON, ENG.

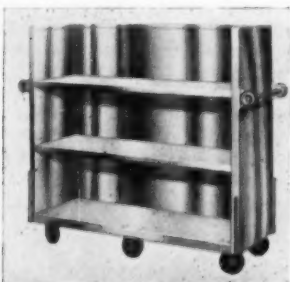
Circle No. 106 on Reader Service Card for more information
FLOW (EQUIPMENT & SUPPLIES SECTION)



FAST, SMOOTH DRIVE

Conventional gear shifting or the need for a clutch is eliminated with the new Towmotorque fork truck transmission. The torque converter type drive permits fast, smooth truck operation. An exclusive Creep-Control feature enables the operator to "inch" the truck along smoothly when necessary, while maintaining high engine speed for full power lifting, mast tilting or hydraulic accessory operation.

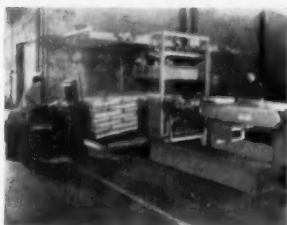
Towmotor Corporation
Circle 260 on Reader Service Card



FOR CROWDED AREAS

This lightweight aluminum cart permits easy movement, steering and turning in crowded places. Standard construction measurements are 19 inches wide, 50 inches high and 53 inches long. Rubber bumpers on corners and handle ends are standard, and six wheel design is said to prevent material from sliding off in transit.

Crescent Metal Products, Inc.
Circle 261 on Reader Service Card



VERSATILE PALLET LOADER

Speedy stacking of a wide variety of units can be accomplished with this new pallet loading machine, it is claimed. Unit is described as operating on a remarkably simple suction-pick-up principle which lifts the units in much the same manner as an electro-magnet han-

Circle No. 99 on Reader Service Card for more information



ADVANTAGES OF NEFF & FRY BIN CONSTRUCTION

The photo shows a Neff & Fry Bin being erected alongside another which is completed.

A course of tongued and grooved staves has just been laid up and the steel hoops are being adjusted. Observe that the stave ends are diagonal. All stave ends in a horizontal joint are supported by a hoop, not possible if the staves were rectangular.

Between the joint hoops as many intervening hoops are in-

stalled as needed to effect a five-to-one safety factor.

Because of this unique construction, Neff & Fry Bins have extraordinary strength and durability. They last for decades with little or no maintenance expense. They do not spall, rot, rust, or burn.

If you have flowable bulk materials to handle and store, it will pay you to read our folder, "Bins With the Strength of Pillars." Ask us for a copy.

THE NEFF & FRY CO. • 110 Elm St. • Camden, Ohio

Not exported except to Canada and Mexico

SUPER-CONCRETE STAVE STORAGE BINS

**IT'S YOURS
-FREE!**

**This book is important reading
for those who want
to cut processing costs**



Here are 32 pages of informative text and pictures on Cyclone's complete line of metal conveyor belts—the belts that are cutting costs and speeding flow of products in scores of processing operations. Photographs show actual installations which illustrate the versatility of Cyclone Conveyor Belts.

Catalog includes information on: the many styles of Cyclone Conveyor Belts available in carbon, alloy or stainless steel . . . the specifications and outstanding features of each type . . . various drive systems used . . . "flights," sprockets and other useful accessories . . . the proper care of metal belts for longest service.

This is truly the kind of book you'll want to keep handy for ready reference.

CYCLONE FENCE DEPARTMENT

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

MAIL THIS COUPON TODAY

**USS CYCLONE
METAL
CONVEYOR BELTS**

SPIRAL WOVEN
FLAT WIRE • FLEX-GRID



Cyclone Fence, Dept. A-85
Waukegan, Illinois

Gentlemen:

Please send me your big, illustrated
Catalog #5. No charge or obligation.

Name.....

Company.....

Address.....

City.....State.....

UNITED STATES STEEL

Circle No. 11 on Reader Service Card for more information



Harvey Sez:

**They're Cheaper
—But
By Golly—
we make 'em
good and we
can show ya!**

We don't claim to make the best pallets and boxes but I'll be darned if anybody makes them any better. Our prices are right, too.

Up here in the hills, we mind our own business and turn out pallets, boxes and skids at a price that makes it downright embarrassing for competition. We have representatives in 86 cities but, if there isn't one to take care of you in your own home town, send us your requirements and we will take a crack at them.

SUPREME MFG. CO.

P. O. Box 63
BERGMAN, ARKANSAS

dles ferrous materials. A conveyor line feeds the machine, and a push button controls the pattern-laying. The unit is said to be equally suitable for unloading pallets and feeding packages onto a conveyor line.

Alvey Conveyor Manufacturing Co.

Circle 262 on Reader Service Card

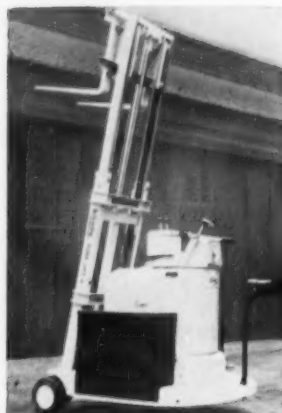


SEGMENTED CABLE CONVEYOR

This segmented cable conveyor permits angles of dip up to 75 degrees in standard systems and 90 degrees with special installations. Trolley brackets are a cast one-piece design with a simplified hooking device which permits rapid change of cable segments without dropping the load. The new system is said to increase utilization of available space with no increase in costs for heat, light and building maintenance.

Flex-I-Line Conveyor Corp.

Circle 263 on Reader Service Card



ELECTRIC TRUCK OFFERS IMPROVEMENTS

This improved model electric fork truck has a capacity of 1250 pounds on a 15 inch load center, and a lifting height of seven feet, six inches. It is 36 inches wide, 83 inches long overall (including standard forks), and 67 inches high. The power unit and steering assembly allow a full turn through 90 degrees in either direction. Lifting speed is 25 fpm and travel speed is four-and-a-half mph unloaded, three-and-a-half mph loaded. There is a detachable tubular seat pillar with sprung saddle seat.

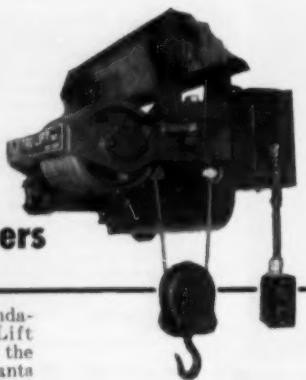
Wessex Industries (Poole) Limited

Circle 264 on Reader Service Card

ElectroLift

WORM DRIVE HOIST

**thousands
in service
for
leading
manufacturers**



The finest recommendation for ElectroLift Hoists is their use by the thousands in the plants of America's industrial giants.

It will pay you to be guided by the experience of these leading firms. Long-lasting, dependable ElectroLift Hoists give you efficient, one-man

operation; a wide selection of speeds, capacities and controls.

For full details call your ElectroLift representative listed in the telephone directory.

ELECTROLIFT

ELECTROLIFT, INC., 204 Sargeant Ave., Clifton, N. J.

2825

Circle No. 45 on Reader Service Card for more information
148



Photo taken at Jackson & Perkins Co., Newark, N. Y.



The Denominator goes to work for JACKSON & PERKINS!

Each unit of the 500-unit Denominator shown above represents a particular type of rosebush. As each order is received, it is tabulated on its respective unit. Order tabulation is greatly simplified—no pencil or tally sheet necessary! The total shown on each unit indicates the number of plants sold—and when deducted from stock on hand—provides running inventory control!

The Denominator can be made up in as few or as many units as you may require. Consult us for your particular needs, without obligation, write Dept. FM-54.

THE Denominator Company, INC.

261 BROADWAY, NEW YORK 7, N. Y.



Manufacturers of Tabulating Machines for 40 years

Circle No. 23 on Reader Service Card for more information
FLOW (EQUIPMENT & SUPPLIES SECTION)



LIFTS AND DUMPS

Portable skip-hoist and dumper lifts, up-ends and dumps any free flowing material at rates up to 15 tons per hour. Said to sharply cut manual labor and eliminate hazards to workmen. Can be equipped to handle bags, boxes, drums, barrels and special containers.

Colson Equipment & Supply Co.

Circle 265 on Reader Service Card

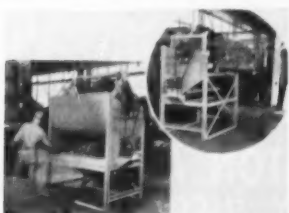


SELF-PROPELLED UTILITY CRANE

This one-man operated, rubber tired utility crane is self-propelled and is said to offer unique advantages previously unknown to utility cranes. Designated as the UC-68, it has a 15 ton lifting capacity and will travel at speeds up to seven mph. Featured is a true power hydraulic control system called Speed-o-Matic, which has boosted output on some production jobs as much as 25 percent, according to the manufacturer.

Link-Belt Speeder Corporation

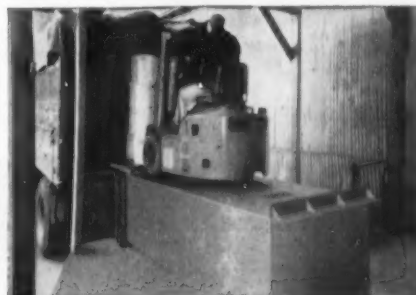
Circle 266 on Reader Service Card



BOX ROTOR

A low-speed gear operated box rotor with feeding stand for dumping any size

AUGUST, 1955

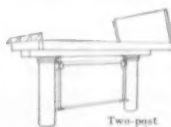


Get a **LIFT** from **FIELD**...

LOAD-O-MATIC



One-post model



Two-post model

Effortlessly, smoothly, and quickly, the Field LOAD-O-MATIC automatically lifts loads up to 20,000 lbs. from loading dock to floor of truck, whether truck is above or below dock. The LOAD-O-MATIC drastically cuts loading time. Always working on the level eliminates spilling, prevents accidents. Two models available: two-post for loads 10,000-20,000 lbs.; one-post, under 10,000. LOAD-O-MATIC can be installed at ground level with rear safety barrier to prevent run-off... For details, write for bulletin.

FIELD ENGINEERING PRODUCTS CO.

66 FOOTE AVENUE · JAMESTOWN, N. Y.

YOURS... for the Asking!



**DICO'S
NEW TRUCK
AND WHEEL
CATALOG NO. 56**



This catalogue illustrates modern hand trucks which will make you money by reducing your material handling costs. These modern, streamlined, all-steel trucks are engineered and designed to handle your loads better, faster and easier! Investigate the "plus" features of the DICO truck and wheel line before you buy any truck! Get all the facts NOW!

Circle No. 39 on Reader Service Card—or MAIL COUPON



DICO COMPANY, Des Moines 5, Iowa

Please send immediately your new Catalog No. 56 describing the complete line of modern Dico hand trucks and industrial wheels.

Name

Address

City State

Circle No. 39 on Reader Service Card for more information

BOWERS

BATTERIES

Always
Better

BOWERS BATTERY & SPARK PLUG CO., READING, PA.

container. Dumping is accomplished by manually operated set of gears which tilts the box and empties small parts or other material into the feeding stand tray for easy disposal. Boxes of any type construction can be handled.

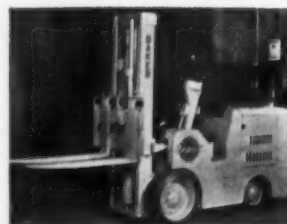
Palmer-Shile Company
Circle 267 on Reader Service Card



ECONOMICAL TRUCK CRANE

Greater economy in delivery and material handling is said to be possible with this new electric Hoist-O-Matic truck crane. Handles loads of 1000 pounds within radius of eight feet, and is push button controlled. Crane is six feet high.

Hoisters, Inc.
Circle 268 on Reader Service Card



NEW 3000 POUND TRUCK FEATURES ECONOMY, PERFORMANCE

Model FD-30, 3000 pound Gas-O-Matic truck utilizes the exclusive Baker-Raulang variable voltage generator integral with a gasoline engine. This gives the performance of a gas engine truck with the economy of an electric truck, says the manufacturer, as clutch, transmission and gear shift are eliminated. Foot-pedal-operated electrical inching control permits high speed hoisting at low travel speeds. Maximum travel speed loaded is 8 mph; lifting speed 40 fpm; lifting height 130 inches.

Baker-Raulang Company
Circle 269 on Reader Service Card

WIDE-CROWN STAPLERS

Staplers for closing tops and bottoms of corrugated shipping containers with wide-crown staples. The model D12BT "Boxlok" closes tops and bottoms simultaneously or separately. Staples are driven to straddle the center seam of a

FREE LAYOUT SERVICE

...assures better storage
facilities for less money

Take advantage of Equipito's Free Layout Service to obtain valuable advice on the number and type of storage units to buy ... complete floor plans and elevation drawings showing best way to arrange units within your allotted storage area. You will thus be able to make maximum use of your floor space, save steps, speed customer service, and simplify inventory and stock control.

If you would rather lay out your own facilities, send for fact-cramped, fully illustrated booklet, "How to Solve Your Storage Problems."

Both "assistants" are further evidence of Equipito's primary concern with providing super-efficient storage facilities—not in merely selling equipment.

Division of Aurora Equipment Co.

805 Prairie Avenue, Aurora, Illinois
Steel Shelving . . . Parts Bins . . . Drawer Units

Circle No. 48 on Reader Service Card for more information
150

WASHINGTON DOCK BOARDS and YARD RAMPS

- Standard sizes and custom fabricated
- Constructed of strong, lightweight
aluminum alloy



Write for
literature

**WASHINGTON ALUMINUM
COMPANY, INCORPORATED**
BALTIMORE 29, MARYLAND • ARBUS 2700

New York Office—MU. 7-0926
Circle No. 138 on Reader Service Card for more information
FLOW (EQUIPMENT & SUPPLIES SECTION)

regular slotted container or they can be driven at an angle near the edge of an overlapping flap. Both methods can be combined, one on top, the other on the bottom of a container. Both top and bottom stitching heads may be swiveled from a right angle to approximately 45°.

Bostitch

Circle 270 on Reader Service Card

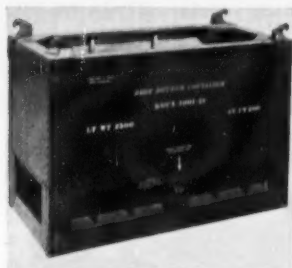


LIVE AND GRAVITY ROLLERS CARRY SMALL PARTS

Newly designed conveyor combines live rollers on the straightaway and gravity rollers on merging sections. The one inch rollers are closely spaced to carry relatively small, flat, stamped parts. Guard rails are present on both the straightaway and curves. Steel legs supporting the curve sections are adjustable vertically. Variable speed control motor is mounted out of the way.

Sage Equipment Co., Inc.

Circle 271 on Reader Service Card



ESPECIALLY FOR COKE

Drop bottom container especially designed to handle coke has 200 cubic foot capacity. Helps prevent coke crumbling. When discharge door is released, it re-locks automatically in closed position. Has all-steel welded construction.

The Youngstown Steel Door Co.

Circle 272 on Reader Service Card

PACKAGING MACHINES FOR ALMOST ANY JOB

Three new automatic packaging machines may be purchased as individual units or in any combination to suit special requirements. A machine equipped with tray conveyor feed is said to be ideally suited for packaging multiple items in a package (i.e., kits). Another

Circle No. 15 on Reader Service Card for more information

Keep Your Product on the move

with
ASHWORTH

Process Belts

WOVEN WIRE and

FLAT WIRE DESIGNS

Bright or galvanized steel

Corrosion resistant stainless

Chrome nickel alloys for high temperature

Ashworth Metal Belts permit the combination

of product processing and material flow.

ASHWORTH BROS., INC.
WINCHESTER, VIRGINIA

**Sales
Engineers:**

Atlanta • Buffalo • Charlotte, N. C. • Chicago • Cleveland • Dallas • Detroit
Greenville, S. C. • Los Angeles • Louisville • New York • Philadelphia • Rochester
Seattle • St. Louis • St. Paul • Canadian Rep., PECKOVER'S LTD., Toronto • Montreal

WRITE FOR
ILLUSTRATED CATALOG



Trojan

TRACTOR

for POWER TRAVEL

Proven Money Saver In Hundreds of Instances.
Ask for Trojan Tractor Bulletin 810.

Make your hand pushed hoists and cranes power traveled. Eliminate slow pulling and pushing drudgery. Speed up handling, save time, increase production, reduce costs. Simply attach a Trojan Tractor; inexpensive, quick delivery. Order one today.

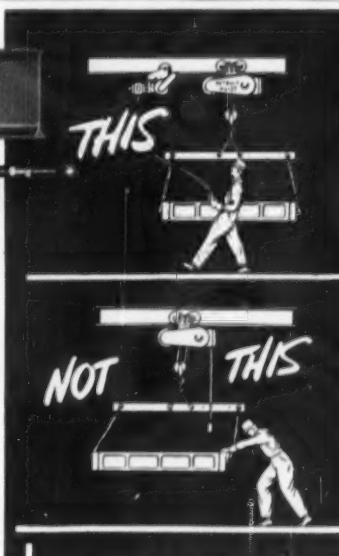
DETROIT HOIST & MACHINE CO.

8210 Morrow St., Detroit 11, Mich.

Hoist, Crane & Tractor Designers & Manufacturers

Since 1905

Circle No. 37 on Reader Service Card for more information



• Also ask for the
Detroit Hoist & Machine Co.
New General Catalog 795



Electric Traveling Cranes



Electric Hoists

CESCO'S TOTE-SHOP BOXES

DO YOUR ROUGH/TOUGH JOB
EFFICIENTLY • EASILY • ECONOMICALLY
on Conveyors • Pallets • Hand Trucks
Skid Platforms or what have you



**STACK
SECURELY,
CONVENIENTLY!**

Solve your Storage and Handling Problems with our Tote Boxes, Trays and Pallets. Write today for quotations on special sizes. Special Marking Facilities, for identification purposes, are available in various colors and numbers. Please submit detailed specifications.



Model # WB—Wood Bottom (illus.)

STANDARD SIZES AVAILABLE FROM STOCK

Model	Size	Length	Width	Depth	Weight
WB-1	I. D.	14 1/2"	11 1/2"	9"	11 1/2 lbs.
WB-2	I. D.	18"	11 1/2"	9"	13 lbs.
WB-3	I. D.	20"	11 1/2"	9"	14 lbs.

CESCO CONTAINER CO.
Factory: NORTHAMPTON, MASS.
General Office:

Dept. (F) 473 Fifth Ave., New York 17, N.Y.

machine has a printing unit which permits it to print any message on a package at the same time it forms, fills and seals. A third unit is able to remove air from a package in addition to forming filling, and sealing.

Pak Rapid, Inc.

Circle 273 on Reader Service Card



OPERATOR "GOES UP" FOR LOAD

Speedy order selection is easily accomplished, according to the manufacturer, with the new high-lift Jackstacker. All controls of truck, mounted against backplate of fork carriage, are controlled by driver from fully protected position on operator's platform. Because operator can raise himself to pick material from higher shelves, goods to be made into orders can be stacked higher than formerly possible, it is claimed.

Lewis-Shepard Products Inc.

Circle 274 on Reader Service Card



RAPID DRAINING BASKETS

Perforated stainless steel baskets feature strength, rigidity, rapid draining and easy cleaning. Of all-welded, die-made construction, five different sizes are available in either stainless steel, aluminum or cold rolled steel. Use of the perforated baskets permits handling of parts throughout all production operations, eliminating rehandling of contents into special baskets for dipping or degreasing.

Chas. Wm. Doepke Mfg. Co., Inc.

Circle 275 on Reader Service Card

LPG CARBURETION SYSTEM

Better engine life and reduced maintenance are claimed for this L.P.-Gas carburetion system. Other advantages

Man hours are dollars...

Save both with

JAKES SAFE-TOW TERMINAL TRUCKS

The more man hours you save, the more dollars you earn. And you save plenty by equipping your terminal warehouse with Jakes new terminal trucks for either manual or conveyor operation. Sizes 32" x 40" and 32" x 48"; either 6" or 8" wheels, rubber-tired or plastic. Sealed ball bearings and casters. Deck of safety floor plate. All-welded construction.



WRITE, WIRE, OR CALL
FOR FULL INFORMATION

JAKES FOUNDRY COMPANY

Established 1891

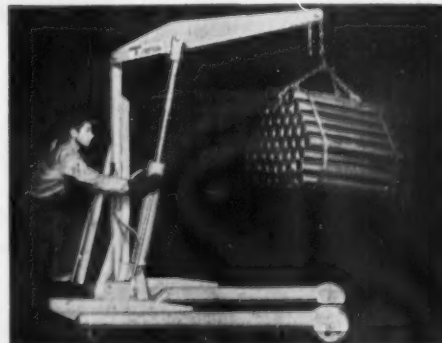
2800 Charlotte Avenue

Nashville 9, Tennessee

Circle No. 77 on Reader Service Card for more information
152

Anything You Can Hang on a Hook Can Be Easily Handled by a RUGER CRANE

Move heavy, bulky loads easily, quickly—with one man and a Ruger Hydraulic Floor Crane. Capacities from 1/2 to 3 tons.



SUBSTITUTE FOR AN ELEPHANT® RUGER CRANES

601 West Fourth St

UHRICHSVILLE, OHIO

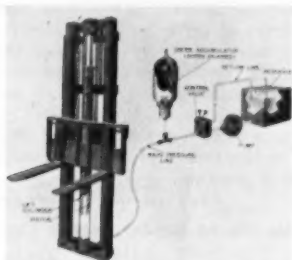


SEND FOR 1955 CATALOG
Shows the complete Ruger 1955 line of Floor Cranes. Gives full specifications. Truck mounted hydraulic cranes also available. Capacities 1/2 ton to 2 tons, write now for your copy.

Circle No. 113 on Reader Service Card for more information
FLOW (EQUIPMENT & SUPPLIES SECTION)

pointed out are low fuel cost, no crankcase dilution and no objectionable exhaust fumes. Main components in this manufacturer's carburetion system include a supply tank, filter, LPG and gasoline solenoid valves, regulator, and carburetor or adapter.

Marvel-Schebler Products Division
Circle 276 on Reader Service Card



SOLVES SHOCK AND VIBRATION PROBLEMS

Shock and vibration problems common to most hydraulically operated lift trucks can be solved by the Greer Accumulator, according to the manufacturer. The new hydraulic component permits faster, smoother operation, and danger of spillage and breakage is reduced, it is claimed. Connected to the main pressure line between lift cylinders and control valve with pipe-T and hose, it is said to alleviate structural strain, add longer life to components and reduce driver fatigue.

Greer Hydraulics, Inc.
Circle 277 on Reader Service Card

OVERHEAD TROLLEY SYSTEMS

Manufacturer now offering a complete range of engineered overhead trolley conveying systems. New improved flangeless A-F wheels for four inch I-beams are grease lubricated and sealed against dirt. They are of turned carbon steel construction, thoroughly hardened, and with precision-ground race-ways having chrome steel balls caged in riveted two-piece steel retainers with provision for easy lubrication. Capacity is 600 pounds. Trolley wheels may also be ordered with automatic lubricators.

The Alvey-Ferguson Co.
Circle 278 on Reader Service Card



HAS GREATER REACH

Greater reach at maximum and intermediate heights is claimed by manufacturer for two new hydraulic powered front end loaders designed for installa-

ONE MAN Does the Work of 15 with this WISCONSIN- POWERED HYSTER "20" Lift Truck



As a manual handling "back-breaker", this job is "all wool and a yard wide"... lifting and stacking baled wool weighing 1000 to 1200 lbs. per bale. The 30-inch load arms of this Hyster Truck and the rugged, dependable power supplied by the Wisconsin Heavy-Duty Air-Cooled Engine make this an ideal operation for *one man*, doing the work that formerly required 15 huskies, at the same time reducing possibilities of accident and injury.

This is another typical materials handling assignment that is a "natural" for Wisconsin Air-Cooled Engines because of their inherent Lugging Power, heavy-duty engineered design and construction and foolproof AIR-COOLING.

You can't do better than to specify "Wisconsin Power" for your equipment.



WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

A 8466-55



NOW moves **32 drums an hour**
with **ONE MAN!***

Formerly 16 Drums
an hour with
overhead crane
and 2 men....

THE **LIFT-O-MATIC**
POWER TRUCK ATTACHMENT
for **DRUM HANDLING**

- ✓ Simple . . . One operator can attach or remove unit, WITHOUT TOOLS, in only 2 minutes.
- ✓ Automatic . . . Raising or lowering truck carriage provides automatic, mechanical pick-up and release. Additional operator controls unnecessary.
- ✓ No Pallets Needed . . . Move, tier or place drums quickly without pallets.
- ✓ FITS ANY TRUCK

* Case history on request

Write for Details **MARVEL INDUSTRIES, Inc.**
2224 CLEVELAND ST., EVANSTON, ILLINOIS

Circle No. 146 on Reader Service Card for more information

Circle No. 142 on Reader Service Card

CAPCO DOCK COVERS GIVE YEAR 'ROUND PROTECTION

CAPCO Dock Covers completely enclose the space between car and building doorways protecting loading and unloading during bad weather, preventing accidents, insuring against loss of heat or refrigeration. 51 different models in any size for every loading problem.



Write for literature and name of nearest distributor.

CAPCO

622-24 PROSPECT AVENUE • KANSAS CITY 24, MISSOURI

tion on Fordson Major tractors. Model AJ-20 has 2000 pound rated lift capacity and 3500 pound breakaway capacity; model AJ-25 has 2500 pound lift and 4500 pound breakaway capacity. Both have a maximum loading height of 10 feet, 10 inches.

Sherman Products, Inc.

Circle 279 on Reader Service Card



PALLET LOADER TERMED "ECONOMICAL"

A pallet loader which it is claimed can pay for itself in approximately one year. In operation (1) packages flow onto pallet and are guided into position by operator; (2) flow stops and level changes automatically at push of button; (3) loaded pallet is gravity discharged; (4) new pallet is raised to loading position. The unit is said to have a low initial and operating cost, and will operate in a small floor space with low ceiling height.

Production Devices, Incorporated

Circle 280 on Reader Service Card



FILLS, SETTLES, COMPACTS

Vibrating tables used for filling, compacting and settling may be incorporated into roller conveyor system. The vibrating unit consists of two cam shaped weights attached on each end of an electric motor. Self-contained vibrator is completely enclosed, and there are no belts, pulleys or reciprocating parts to wear out.

The Cleveland Vibrator Co.

Circle 281 on Reader Service Card

ALL-PURPOSE METAL FRAMING

New lightweight, all-purpose metal framing, said to be low cost. The new A series channels are specially designed for construction of shelving, racks, display framing, mechanical and electrical supports, etc. It retains the same basic components of the P series in scaled-down version, and requires only a hacksaw and wrench to erect. Three sizes of channel are available in lengths of 10 and 20 feet.

Unistrut Products Company

Circle 282 on Reader Service Card

50th Anniversary Year



1-A Series—
Stationary Caster



36-A Series—
Double Ball Race
Swivel Caster



Bond Self Load—
Unload Drum
Truck

1905 **Bond** 1953
For Half a Century
Prime Movers in Materials Handling



Bond Universal Lift
Jack and Platform

As Bond Foundry starts its second fifty years of service, we pledge again a constant effort to design and build the finest equipment. Whatever the materials handling equipment you need, your best buy will always be Bond.

BOND FOUNDRY & MACHINE CO.
Manheim, Pa.

Circle No. 21 on Reader Service Card for more information
154

YOUR BEST MOVE IS TO MOVE WITH MERRILL MATERIAL HANDLING DEVICES



LIFTING CLAMP



TWIN LIFTER



DRUM TILTER



DRUM LIFTER



HAND GRIP



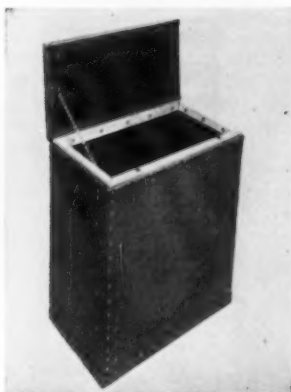
DRUM OPENER

For Interesting Information write

MERRILL BROTHERS

56-74 ARNOLD AVE., MASPETH, N. Y.

Circle No. 93 on Reader Service Card for more information
FLOW (EQUIPMENT & SUPPLIES SECTION)

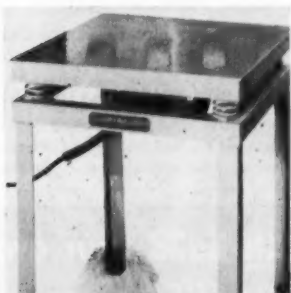


PROTECTS DELICATE PARTS

This vulcanized fibre container will transport delicate parts with complete protection from rough handling, according to the manufacturer. Featured as being tough, resilient and impact resisting, the lightweight container has round corners and a smooth interior.

National Vulcanized Fibre Co.

Circle 283 on Reader Service Card



VIBRATING TABLE PROVIDES MAXIMUM EFFICIENCY

Maximum efficiency in compaction, separation, proportioning and cleaning operations is possible with this new series of vibratory tables, it is claimed. Latest model, EMB 6, has a circular, surfaced table-top and cast iron lower section containing an electro-magnetic vibrator. Type ERB has a heavy gauge steel table top, strongly braced and spring mounted, with electric vibrators attached underneath.

Vibro-Plus Products, Inc.

Circle 284 on Reader Service Card



BAY TRANSFER CAR

Motor driven transfer cars that operate across bays in parallel bay plants served by overhead cranes have been introduced and trademarked Cross-Bay. Cross-bay movement of materials in conjunction with parallel overhead crane

WITH EVERY ADVANCE FEATURE FOR EFFICIENT ASSEMBLY OPERATIONS



This wide span, three motor, cab-controlled crane is ideal for assembly floor operations.

It has hoists of two capacities, is capable of rapid lateral and longitudinal travel or the precise vertical movement so essential in assembling vital parts of valuable machines.

Basically of course, it is a Euclid Crane which assures dependable and efficient performance with low cost of operation and maintenance.

Available also are: Euclid Cranes, evolved through years of experience and specifically adapted to the peculiar needs of practically every industry. Write for new catalog available.



Euclid Cranes The EUCLID CRANE & HOIST Co.

1362 CHARDON ROAD

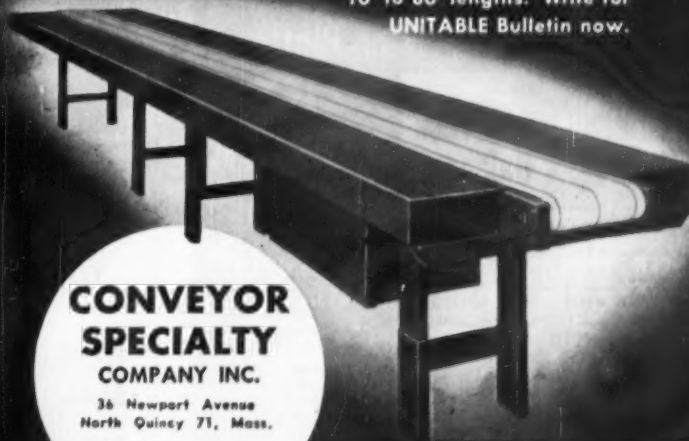
CLEVELAND 17, OHIO

UNITABLE BELT CONVEYOR

For Assembly - Inspection - Packaging

The most ADAPTABLE portable conveyor you can find. Exclusive "unitized" design

10' to 80' lengths. Write for UNITABLE Bulletin now.



**CONVEYOR
SPECIALTY
COMPANY INC.**

36 Newport Avenue
North Quincy 71, Mass.


Circle No. 35 on Reader Service Card for more information

Circle No. 100 on Reader Service Card

the NEW LONDON
"Trough Belt"
 CONVEYOR "TEAM"
 for
FAST Undercar Unloading
LOW COST • LIGHT
PORTABLE • VERSATILE
DEPENDABLE

for
PRICE:
 14' Undercar Model
\$878.00
 30' TB Conveyor
\$887.00

SAND, HAYDITE, LIME-
 STONE, SALT, other
 small size bulk ma-
 terials • Gas or elec-
 tric—12" trough belt



Write for Catalog
NEW LONDON ENGINEERING CO.
 Dept. F • New London, Wisconsin

service is said to permit spotting of loads anywhere on plant floor. The cars may also be used for transfer between plant buildings, storage yards or shipping platforms.

Easton Car & Construction Co.

Circle 285 on Reader Service Card

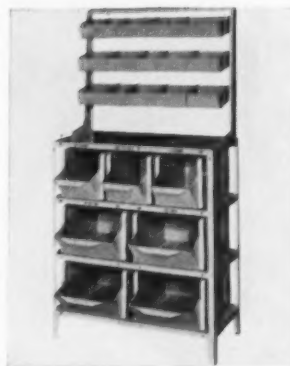


ACCURATE PULLING TOOL

The Cum-a-Long Puller is described as a safe and accurate lightweight tool for many pulling and lifting jobs in maintenance work. Absolute control of the load to within 1/32 of an inch is said possible. Capacities are available up to five tons.

Ohio Hoist & Mfg. Co., Inc.

Circle 286 on Reader Service Card



MODULE UNIT SIMPLIFIES OPERATION

Use of this new module unit will provide greater flexibility of arrangements for parts storage and assembly operations, it is claimed. The stand measures 12 inches deep, 28 inches long and 30 inches high. It is fabricated of heavy gauge steel, with welded joints and baked enamel finish. May be grouped into various units with connecting shelves for large or small work areas.

Bathey Manufacturing Co.

Circle 287 on Reader Service Card

POWER DRIVE WHEELS ARTICULATE

Power drive wheel articulation of 15 1/8 inches is the newest feature of Go-Getter lift trucks. This articulation of the dual



MODEL NO. 8060

So Easy to Lift & Truck
with Perfect Balance

(1500 lb. Capacity—Battery Powered)

EASIER & FASTER • LIFTING • MOVING
 • HAULING • STACKING
 • UNLOADING

REDUCES & SAVES • MANPOWER • FATIGUE
 • ACCIDENTS • DAMAGE
 • COSTS

ALLIED MFG. & SALES CO.
 Materials Handling Equipment Div. of GRAND
 SPECIALTIES CO. • 3101 W. Grand Ave., Chicago
 2, Illinois

Quality Products • Since 1921 • Quality Service

Circle No. 4 on Reader Service Card for more information
 156

NOTHING BETTER!



**LIFT
 KING**
 Finest Fork
 or Platform
**LIFT
 STACKER**
 with a
60 inch Lift

14 OTHER low priced models
 for every intermediate job.
 Designed for floor level load-
 ing and unloading at trailer
 tailgate height—also stacking.

Send for Complete Catalog and
 details on 10 day Free Trial
 Demonstration Plan.

**YES! You CAN build your own
 STORAGE RACKS**

**AT
 LOW COST**



WITH
**TUBE
 STRUT**
 CLAMPS

**A strong and economical rack with
 TUBE-STRUT clamps and your own
 pipe. Write for details.**

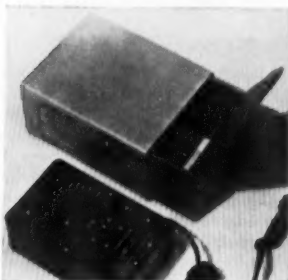
TUBE-STRUT DIVISION
TUBULAR STRUCTURES CORP. OF AMERICA
 3129 RIVERSIDE DRIVE
 LOS ANGELES 27, CALIFORNIA

Circle No. 129 on Reader Service Card for more information
FLOW (EQUIPMENT & SUPPLIES SECTION)

drive wheels gives unusual traction even under adverse floor conditions, according to the manufacturer. It enables the truck to glide over door saddles and go up and down ramps easily, bringing each load to its destination in top condition, it is claimed.

Revolver Company

Circle 288 on Reader Service Card



BUILT-IN PROTECTION

Intricate electronic equipment demands superior protection—and gets it in this corrugated slide box used by Industrial Development Laboratories, Inc. The box is used to package and ship the Signa-Glow, a resistance measurement bridge. Product protection is inherent in the double-thickness sides of the shipper and is further insured through use of a single interior packing piece. The unit's simple construction speeds box set-up and packing time. Complete package weighs only two pounds, five ounces.

Hinde & Dauch, Paper Co.

Circle 289 on Reader Service Card



INDUSTRIAL SWEEPER

New model power sweeper features a power reverse, 16 brushes on the main broom, 3.6 hp Clinton engine and heavy duty casters. Main broom and side brush height controls are located on steering bar. Will sweep up to 45,000 square feet per hour.

Modern Power Sweeper Co.

Circle 290 on Reader Service Card

RUBBER DOCK BUMPERS

Compressed rubber dock bumpers, said to be practically indestructible and both hard and resilient, withstanding even sharp edges on truck beds without cutting. They can be mounted over wood or anchored to concrete docks. No angle

Circle No. 34 on Reader Service Card for more information



for short handed plants . . . a helping hand

A modest crane investment can return important profits — when it's a Conco Crane custom designed to meet your needs. Write for a trained Conco representative to call. His recommendations, like Conco Cranes themselves, are backed by 37 years of engineering experience.

CONCO ENGINEERING WORKS

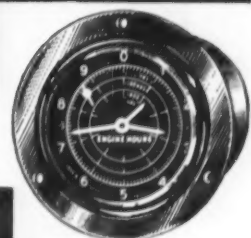
Division of H. D. Conkey & Company
38 Grove St., Mendota, Illinois

Conco Engineering Works
Domestic Heating Equipment
Affiliates
Conco Building Products, Inc.
Brick, Tile, Stone

Write for Conco Crane bulletin 3000A



FILTER CHANGE?
TIME FOR OVERHAUL?
OIL CHANGE DUE?
NEEDS LUBRICATION?



Do you **KNOW** when protective maintenance is needed?

There's a **RIGHT TIME** for protective maintenance . . . and the **HOBBS HOUR METER** tells you when. Lift trucks and other powered equipment are subject to less down-time and last longer when maintenance is done **ON TIME**.

Not a Revolution Counter

This electric timing instrument shows **HOURS** and **MINUTES** of engine operation. No revolution counter can provide the accuracy needed for genuinely effective on-time maintenance.

Approved by Leading Manufacturers

Installed as original equipment or recommended as approved accessory by leading materials handling equipment manufacturers. Ruggedly built. Easy to install. Low in price. See your factory branch, representative or distributor . . . or **WRITE**:

HOBBS Engine Hour METERS

New and improved
through continuing
engineering research

John W. Hobbs Corporation
2061 YALE BLVD. SPRINGFIELD, ILLINOIS
World's Largest Builders of Running Time Meters

Circle No. 69 on Reader Service Card for more information

Circle No. 86 on Reader Service Card

**USE IT
3
WAYS
..and
More!**

**ARMORBELT
Flat Top
Metalbelt
Conveyor**



The only sectional belt designed for quick and easy assembly. Fully enclosed construction for safe, clean, quiet operation—ball bearings for maximum efficiency—many additional features.

• Standard Accessories

UNIT LOADS TO 500 LBS./SQ. FT.
SPEEDS TO 80 FT./MIN.
WIDTHS 6"—10 FT.
LENGTHS 3"—200 FT.

Write for illustrated catalog

M-H STANDARD CO.
515 COMMUNIPAW AVE. JERSEY CITY 4, N. J.

iron mounts are required. They are not damaged by oil, gas, water or weather, it is claimed. Size of the Kelco bumpers is 18" long x 8" wide x 2" thick.

Kelly Company, Inc.

Circle 291 on Reader Service Card

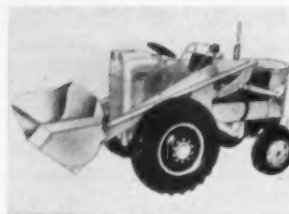


ALL-SURFACE MARKING PENCIL

The Tween mechanical marking pencil is said to combine the features of soft lead pencils, grease pencils, paint sticks and crayons and to work on any surface under any condition. The regular 5½-inch heavy duty plastic barrel with pocket clip is available in various colors—black, red, blue, and green. A black screw turn-top propels the 3½-inch refill.

Tweeten Fibre Co., Inc.

Circle 292 on Reader Service Card



TIP-BACK LOADER BUCKET

A larger bucket with 25 degree tip-back at ground level is available on the model TL-10 Tracto-Loader. Redesigned bucket now has full cubic yard capacity, and width has been increased 1½ inches. Will operate flush against walls. Among advantages pointed out are bigger loads, faster loading and better operator visibility.

Tractomotive Corporation

Circle 293 on Reader Service Card

OVERHEAD CONVEYOR

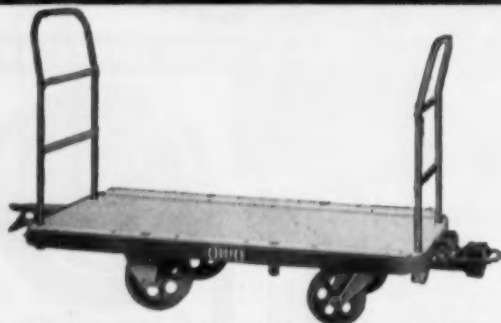
Manufacturer has termed new overhead conveyor system as revolutionary. All turns including 90 degree vertical to 10 degree horizontal are made without idler sprockets, with 16 inch radius, heat treated fabricated curves. Any combination of turns is possible merely by joining horizontal curves with vertical top and bottom curves.

Chainveyor Corporation

Circle 294 on Reader Service Card

OHIO

Industrial Trucks & Trailers



One Piece Tee Section Steel Frame Trailers

No. 2001 size 36" wide x 72" long x 14" high—Two Ton Capacity with Automatic Coupler, Molded-On Tires and Hardwood Top.

Various Platform Sizes may be furnished.

Heavy Duty Trucks and Trailers to YOUR Specifications. Write for Detailed Information.

THE OHIO GALVANIZING & MFG. CO.
NILES • Established 1902 • OHIO

Circle No. 148 on Reader Service Card for more information
158

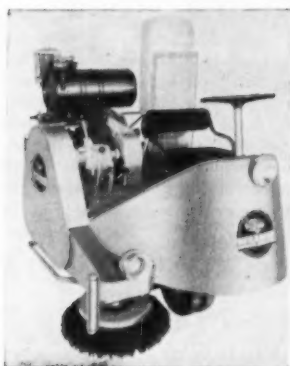
**DO YOU HAVE
A
WEIGHT PROBLEM?**

Whatever you have to weigh, Martin-Decker's free brochure can show you how to do it faster, easier, and with no production slow-down. Such items as hook scales, lift-truck scales, crane weight indicators, stroking diaphragms, and other heavy-duty weight- and tension-indicating instruments are pictured. Write for Bulletin M-15. The Martin-Decker Corporation, 3431 Cherry Ave., Long Beach 7, California

Dept.
N-11

MARTIN-DECKER CORP.
HOME OF THE WEIGHT INDICATOR — LONG BEACH, CALIFORNIA

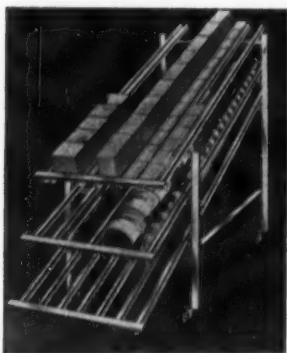
Circle No. 90 on Reader Service Card for more information
FLOW (EQUIPMENT & SUPPLIES SECTION)



POWER SWEEPERS

Seven new power sweepers have been introduced by this manufacturer. Size of units varies from 24- to 48-inches. There's the Multipurpose sweeper for around-the-clock service, the rider-type Industrial Special, and the Utility model for inside or outside sweeping, among others. All models are said to be economical, dependable and efficient.

Wilshire Power Sweeper Co.
Circle 295 on Reader Service Card



PORTABLE STOCK RACK

Any item that will slide or roll can be handled on this portable stock selecting rack. Designated Caravan, the basic unit has three adjustable shelves which can be raised or lowered to vary the angle of slope or distance between shelves. Dividers on each shelf are adjustable to accommodate any width package. Four rubber tired swivel casters provide complete mobility.

M-H Standard Company

Circle 296 on Reader Service Card



SEMI-AUTOMATIC SEALER

A semi-automatic heat sealer with single sealing length of 27 inches. Designed to give packagers of commercial and military products a high-speed, ef-

Circle No. 109 on Reader Service Card for more information

VERSATILE BULK FEEDING... from a trickle to a torrent with VELOFEEDER

A mechanical vibrating feeder especially designed for all materials such as sugar, bran, pellets, feeds, chemicals, and grains at lower cost, higher efficiency.

Here's Why!

Higher Output—300 to 50,000 lb./hr. hard granular materials; 300 to 30,000 lb./hr. soft ground materials.

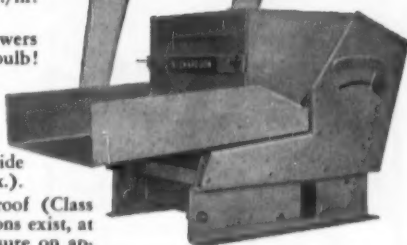
Lower Power Needs—1/8 hp. motor powers unit—inexpensive as a 100-watt light bulb!

Smaller Space Needs—35 inches long, 17 1/2 inches wide, 19 inches high. Standard vibrating tray 16 inches wide—stainless steel when required.

Easier Control—simple adjustment over wide operating range (near 0 to 50 fpm. max.).

Safer Operation—motor is explosion-proof (Class 2, Group G), where hazardous conditions exist, at slight extra cost. Complete dust enclosure on application.

Less Vibration—working frequency is 1850 vibrations per minute; little or no vibration is transmitted to mounting installation (mounts with only 4 bolts!).



If you're interested in better bulk feeding at lower operating cost, write for Bulletin 5302 with complete specifications and drawing.

1099

Richardson SCALE COMPANY, Clifton, New Jersey

Atlanta • Boston • Buffalo • Chicago • Detroit • Houston • Memphis • Minneapolis
New York • Omaha • Philadelphia • Pittsburgh • San Francisco • Wichita • Montreal
Toronto • Havana • Mexico City • San Juan

MATERIALS HANDLING BY WEIGHT SINCE 1902



SAVE MUSCLE POWER
Balanced construction puts 80% of the load on the wheel... only 20% on the operator.



SAVE DOLLARS
Sterlings pay off in PROFITS. Their unusually long service life protects your initial investment. And maintenance costs are nil.

STERLING CSW
Maximum capacity 5 cu. ft. 16 gauge tray, all-welded, no rivets, double lapped at corners. Heavy-duty malleable wheel guard.

DEALERS
Ask about our liberal dealer selling plan. Write for catalog.

STERLING WHEELBARROW CO., Milwaukee 14, Wis.



Costs Less
per Year

Look for this Mark of
STERLING Quality

Sterling
WHEELBARROWS

Circle No. 122 on Reader Service Card for more information

A 7658-1/4

Circle No. 123 on Reader Service Card

HANDLE IT FASTER!
Eliminate Non-Productive Maneuvering
with a
SWING-SHIFT UNIT
HYDRAULIC FORK CONTROL
ADDED TO YOUR LIFT TRUCK

SWING & SHIFT
so that
SWING-SHIFT

- Speeds corloading by reducing truck maneuvering
- Reduces aisle width 19% to increase storage capacity.
- SWINGS and SHIFTS loads quickly into exact alignment without moving truck.
- SWINGS and SHIFTS to Turn load ahead of truck around corners.

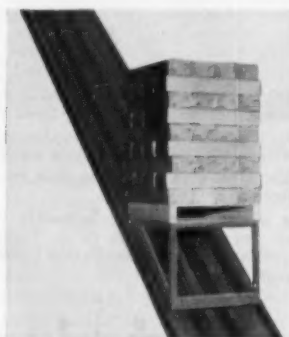
Units Available for
Hyster, Gerlinger, Canadian Mobile, Clark,
Yale & Towne, Buda, other makes

See Your Lift Truck Dealer or Write

SWING-SHIFT MFG. CO.
BOX 957
LONGVIEW, WASHINGTON

efficient heat sealing machine, it seals coated or laminated materials to government or commercial specifications regardless of wrinkles or splices in the material to be sealed. It contains an automatic tripping device that controls the heat-sealing cycle and requires only simple preliminary hand settings for time, heat and pressure. Only one operator is required to insert an unlimited quantity of bags into the machine without additional settings.

Product Packaging Engineering
Circle 297 on Reader Service Card



PALLET CONVEYOR PERMITS FAST OPERATION

A new type all steel floor-to-floor conveyor developed especially for super

markets, but may be applied in a variety of operations. Loaded pallets or barrels are conveyed between floors on an all-steel platform which rides on four casters. Top capacity is 2000-pounds. An automatic stop top and bottom permits constant control of loads. Use of the conveyor makes possible fast operation on several floors, or expansion up or down.

Wehle Conveyor Co.

Circle 298 on Reader Service Card

ACCURATE BAGGER

Manufacturers of free flowing materials will be interested in this high-speed extremely accurate weighing and packaging unit. The machine works in conjunction with a moving conveyor and sewing head. Weighing and filling cycle is completely automatic. It begins when operator pushes the starter button to automatically deliver pre-weighed material through the machine's bag chute in an endless series. Filled weight drops each of the open mouth multiwall bags onto a moving conveyor belt which leads through the sewing head. The bagger has a double-faced dial scale which permits both closing and filling operators to see it at all times. Accuracy has been tested at plus or minus 1-2 ounces over a six-month period. Average speed is 18 one hundred-pound multiwall bags per minute.

Union Bag & Paper Corp.

Circle 299 on Reader Service Card

EFFICIENT PRODUCTION
with
RACK HYDRAULIC UTILITY TABLES

PRICE
\$310
f.o.b. factory

132

One-piece 1/4" steel plate work top, which rotates 360 degrees . . . double speed hydraulic foot pump . . . and rugged roller bearing 6" casters . . . contribute to the performance records of this versatile table. Write for complete specifications.

Immediate Delivery from Stock

RACK HYDRAULIC EQUIPMENT CORPORATION
CONNELLSVILLE, PENNSYLVANIA
AGENTS IN PRINCIPAL CITIES UNITED STATES, CANADA, EUROPE

Circle No. 24 on Reader Service Card for more information
160


Coming Soon...

F. D.

M. C. M. H. I.

FLOW (EQUIPMENT & SUPPLIES SECTION)

Circle No. 147 on Reader Service Card



**"COSTS CUT
60¢ per hour
per machine"**

"simplified our time study and cost analysis."
"and, we will install your units on all our machines."
"...meets all our requirements. Ship 35 more units at once."
—just a few of the many comments we receive daily about...

TIME RECORDER-TOTALIZER



PRICE \$55.

• This precision instrument provides accurate, permanent, chronological data about any machine, process or system in plant or office...on a continuous chart-roll which lasts four months. Uses no ink. Totalizer shows accumulated "on" time. Descriptive literature FL on request.

RECORDER DIVISION
HEAT-TIMER corporation
657 BROADWAY, NEW YORK 12, N.Y.

NOLAN ONE-MAN CAR DOOR OPENER



**Opens Any Box Car
Door in 20 Seconds
or Less! \$37⁵⁰
EACH**

FREE LITERATURE
F.O.B. NOLAN CO., BOWERSTON, OHIO

THE NOLAN COMPANY
110 Pennsylvania Street, Bowerston, Ohio

Please send ☐ ONE MAN CAR DOOR
OPENER at \$37.50
☐ FREE LITERATURE

NAME

ADDRESS

CITYZONE.....STATE.....

Circle No. 102 on Reader Service Card
AUGUST, 1955



"NO-AISLE" RACKS INCREASE STORAGE AREA

By adding mobility to your storage units, you can increase your storage space by 50 percent or more, according to the manufacturer of Rol-Rak. Storage bins, shelving, or other units are mounted on ball bearings and set on steel track. These units are placed directly in front of other mobile units, or in front of fixed units. It is thus possible to gain access to any back unit simply by pushing the front units to one side. Intersecting aisles are completely eliminated, and it is only necessary to have a single lane open from the front tier of storage units to the rear.

Mobile Racks, Inc.

Circle 300 on Reader Service Card

MODERN FUEL

The modern fuel for use on internal transportation equipment is LP-Gas, says this manufacturer of carburetion conversion equipment. It is claimed the tremendous swing on the part of larger plants to LP-Gas as an engine fuel for material handling equipment is being rapidly followed by smaller companies.

American Liquid Gas Corp.

Circle 301 on Reader Service Card

INDUSTRIAL WHEEL STANDARDS APPROVED

Final approval has been given to the release of standards for industrial wheels by the Caster and Floor Truck Manufacturers' Association.

The new standards—covering molded-on, metal and plastic industrial wheels—provide definitions of terms, design and construction requirements, approved methods for testing, and tables of standard dimensions, including operational loads.

Formulation of these standards is a major project of the CFTMA. It is aimed to simplify selection and reduce inventories of classifications of material handling equipment and components produced by member firms.



DARNELL CASTERS & WHEELS

Always **SWIVEL**
and **ROLL**

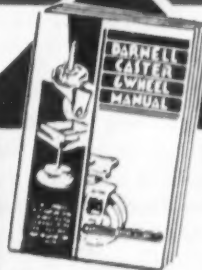
RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darnelleprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

RUST-PROOFED . . . by the Udylite process, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

LUBRICATION . . . all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water. Zerk fittings are provided for quick grease-gun lubrication.

**A TYPE AND SIZE
FOR EVERY PURPOSE**



Free **MANUAL**

DARNELL CORPORATION,
LTD.

DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
46 WALKER STREET, NEW YORK 13, NEW YORK
34 NORTH CLINTON STREET, CHICAGO 8, ILLINOIS

Circle No. 36 on Reader Service Card

HELP WANTED

Sales Executive wanted by Fork Truck Leasing Company located in the East, to head up Sales Department. Must have proven sales record. Thorough experience in Materials Handling Equipment and its application required. Please submit complete resume. Write c/o FLOW, Box 8555.

EXPERIENCED ENGINEER

Capable of taking full charge of design and development of high lift trucks. Call or write for an appointment. Truck-Man Division; The Knickerbocker Company, Jackson, Michigan; Phone STate 2-7181.

REPRESENTATIVES WANTED

Nationally advertised rack manufacturer wants representation in the following States:

Virginia	Georgia
North Carolina	Tennessee
South Carolina	Kentucky
Alabama	

Excellent opportunity for experienced material handling representative. Submit qualifications, territory and lines presently represented. Write c/o FLOW Box 8155.

"Opening for salesman to join a well established material handling agency in the St. Louis territory representing a complete line of well known equipment." Write c/o FLOW Box 8255.

CLASSIFIED ADVERTISING

Rates: for "Positions Wanted" \$8.00 minimum, limit 25 words. For all other classifications \$10.00 minimum for 25 words; each additional word 25c. Boldface type or all caps, \$12.00 minimum for 25 words, each additional word 35c. Box address counts as five words. All insertions payable in advance.

FOR SALE

LIQUIDATING TENNESSEE BREWERY, MEMPHIS, TENNESSEE—Complete Alvey conveyor installation, new 1948, including approximately 250 ft. 16" wide gravity conveyor; 500 ft. belt type power conveyor with 15-20 geared head motor drives; miscellaneous other individual gravity and belt driven conveyor sections plus two "Automatic Lift" 4,000 lb. capacity trucks, Model BF-40, one "Elwell Parker" 2,000 lb. capacity lift truck, Type F26T with batteries, all installed new 1948; today's replacement cost more than \$40,000., our price approximately one-third of new; can be purchased piecemeal, immediate delivery, blueprints & additional data upon request, agents and dealers invited, write **TENNESSEE BREWERY CORP., 11 WEST BUTLER AVE., TELEPHONE 5-1452, MEMPHIS, TENNESSEE**, or exclusive liquidating agents, **CHARLES S. JACOBOWITZ CORP., 3080 MAIN ST., BUFFALO 14, N. Y., Phone AMherst 2100.**

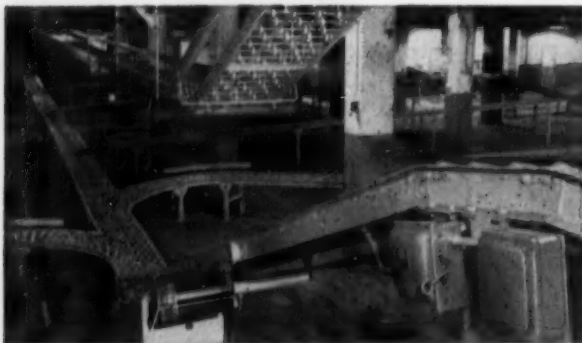
Used Osgood 200 Crawler Crane with 34' boom. Excellent Condition. Price \$3750.00. Ken-Dick Corporation, 1712-15th St. Place, Moline, Illinois. Phone 2-7719.

POSITIONS WANTED

Graduate engineer with administrative experience. Eight years in conveyor sales, engineering and advertising. Write c/o Flow, Box 8455.

SALESMAN 37 with 15 years experience selling equipment and supplies to dealer accounts and industries in Maryland, Delaware, Virginia and District of Columbia desires connection with manufacturer. Write c/o FLOW Box 8355.

SALES ENGINEER with broad experience and engineering background in materials handling equipment, also with wide knowledge of national distributors, seeks opportunity as field representative with major manufacturer. Specialist in layout and design of conveying equipment. Will relocate. Will travel. Presently employed as sales manager. Available in 30 days. Reply in confidence. Write c/o FLOW, Box 8655.



Farquhar Conveyor System installed at Piggly-Wiggly Midwest Co., Rockford, Illinois.

Here are two fully integrated materials handling systems that illustrate how Farquhar Power-Belt and Gravity Conveyors are engineered to effect savings in a wide variety of bulk or package handling problems. Farquhar is a good buy for you, too. It will pay you to get the facts now!

Farquhar

power-belt and gravity

CONVEYORS

Pay Dividends



Farquhar Conveyor System installed at York Container Company, York, Pennsylvania

OLIVER

Farquhar
CONVEYORS

A. B. FARQUHAR DIVISION

THE OLIVER CORPORATION

Conveyor Dept. E-06
York, Pa.

618 W. Elm St.
Chicago 10, Ill.

Write for Bulletin Nos. 400 & 401
covering Farquhar Power-Belt and
Gravity Conveyors.

Circle No. 51 on Reader Service Card for more information

Advertisers' Index

A	
ABC Packaging Machine Corp.	122
Ackermann Mfg. Co.	51
Acme Steel Co.	16 & 17, 89
Allied Mfg. & Sales Co.	156
American Chain & Cable Co., Inc., Wright Hoist Div.	95
American Engineering Co.	132
American Machine & Foundry Co.	145
American Monorail Co.	138
American Pulley Co.	46
American Siskraft Corp.	119
American Steel & Wire Div., U.S. Steel Corp., Cyclone Fence Dept.	147
Appleton Electric Co.	9
Armour & Co.	109
Ashworth Bros., Inc.	151
Automatic Transportation Co.	1

B	
Baker-Raulang Co.	24, 93
Bigelow-Garvey Lumber Co.	124
Big Joe Mfg. Co.	4
Bond Foundry & Machine Co.	154
Bowers Battery & Spark Plug Co.	150
Brooks & Perkins, Inc.	26
Buda Co.	27
Buffalo Weaving & Belting Co.	42
E. W. Buschman Co.	35

C	
Capco	154
Cambridge Wire Cloth Co.	144
Casco Container Co.	152
Chrysler Corp., Industrial Engine Div.	39
Clark Equipment Co.	10 & 11
Colson Corp.	41
Conco Engineering Works	157
Continental Can Co.	98
Conveyor Specialty Co., Inc.	155

D	
Darnell Corp.	161
Deluxe Metal Products, Inc.	127
Denominator Co.	148
Derby Sealers, Inc.	114
Detroit Hoist & Machine Co.	151
Diagraph-Bradley Industries, Inc.	120
Diamond Chain Co.	8
Dico Co.	149
Chas. Wm. Doepke Mfg. Co., Inc.	47

E	
Easiquip Co.	136
Economy Engineering Co.	141
Electrolift, Inc.	148
Elwell Parker Co.	7
Equipment Mfg. Co.	50
Equipto Div., Aurora Equipment Co.	150
Euclid Crane & Hoist Co.	155
Evans Products Co.	113
Exide Industrial Div., The Electric Storage Battery Co.	91

F	
A. B. Farquhar Div., The Oliver Corp.	162
Field Engineering Products Co.	149

Dave Fischbein Co.	118
Flow	121

G	
Gaylord Container Corp.	107
General Box Co.	123
General Electric Co.	40
Gerotter May Corp.	134
Gerrard Steel Strapping Div., U.S. Steel Corp.	105
Gifford-Wood Co.	133
Globe Hoist Co.	45
B. F. Goodrich Co.	55
Goodyear Tire & Rubber Co.	3
Adolph Gottscho Inc.	116
Gould-National Batteries, Inc.	52

H	
Harnischfeger Corp.	49
Heat-Timer Corp.	161
Heil Co.	94
Hercules Motors Corp.	126
John W. Hobbs Corp.	157
Homer Mfg. Co., Inc.	2
Frank G. Hough Co.	43
Hudson Pulp & Paper Co.	125
Hyster Co.	13

I	
Ironbound Box & Lumber Co.	146
Iron Works, Inc.	164

J	
Jaeger Machine Co.	15
Jakes Foundry Co.	152

K	
Keller Tool Div., Gardner-Denver Co.	92
Kimberly-Clark Corp.	117

L	
Lamson Corp.	130
Lamson Mobilift Corp.	131
G. B. Lewis Co.	143
Lewis-Shepard Co.	29

M	
M-H Standard Co.	158
Magline, Inc.	Inside Front Cover
Magnesium Co. of America	21
Manning, Maxwell & Moore, Inc.	144
Martin-Decker Corp.	153
Marvel Industries, Inc.	153
May-Fran Engineering Inc.	88
Mercury Mfg. Co.	18
Merrill Bros.	154
Mid-States Gummed Paper Co.	116, 118
Minnesota Mining & Mfg. Co.	101
Motorola, Inc.	129
Moto-Truc Co.	135

N	
Neff & Fry Co.	147
New London Engineering Co.	156

Nichols Paper Products Co.	114
Nolan Co.	161

O	
Ohio Galvanizing & Mfg. Co.	158
Otis Elevator Co.	19

P	
Pak-Rapid, Inc.	122
Paltier Corp.	86

R	
Rack Engineering Co.	146, 160
Raymond Corp.	22 & 23
Revolator Co.	97
Richardson Scale Co.	159
Robins & Meyers, Inc.	137
C. E. Robinson Co.	96
Roura Iron Works, Inc.	54
Ruger Equipment Co.	152

S	
Schild Bantam Co.	31
Service Conveyor Co.	90
Signode Steel Strapping Co.	111
Silent Hoist & Crane Co.	146
Simplicity Engineering Co.	20
Standard Conveyor Co.	48
Stanley Works, Steel Strapping Div.	115
Sterling Wheelbarrow Co.	159
Supreme Mfg. Co.	148
Swing Shift Co.	160

T	
Taylor Mfg. Co.	56
Thermoid Co.	25
Thew Shovel Co.	85
Towmotor Corp.	53
Tractomotive Corp.	87
Tubular Structures Corp. of America	156

U	
Union Metal Mfg. Co.	12
Union Special Machine Co.	114
Union Steel Products Co.	6, 44
Unistrut Products Co.	37
Unit Crane & Shovel Co.	14

V	
Vibro-Plus Products, Inc.	36
Vickers, Inc., Div. of Sperry-Rand Corp.	Inside Back Cover

W	
Washington Aluminum Co.	150
Weber Addressing Machine Co.	120
West Bend Equipment Corp.	54
Wisconsin Motor Corp.	153
Wright Hoist Div., American Chain & Cable Co., Inc.	95

Y	
Yale & Towne Mfg. Co.	83

EMPIRE**attachments by IRON WORKS, INC.**

**Eliminates the cost and use of pallets
Saves money as it works on any
fork truck for you**

That's right — six drums at a time! No longer do you need to consume time and money with lift truck attachments which will take only one drum or use pallets. The way we figure it, you cut costs to *one-sixth* by using the revolutionary new Empire Drum Clamp — it's simple arithmetic. This amazing attachment requires no pallets. The savings on initial costs of pallets, maintenance (which runs as high as 100% in some plants) and storage space they require alone warrants using our modern palletless Empire attachments. It means money in your pocket — and more time saved on handling. The way we see it, the one-drum lift attachment is about to become as obsolete as the Stanley Steamer. Made up to handle various capacities to suit individual requirements. Presently made for 30, 50, 55 gallon drums for chemical and petroleum industries. Also No. 10 size for food industry. Leasing and rental service available to modernize your fleet of fork trucks. Don't wait — find out about it *today!*

**double barrel performance?
double barrel performance?**

no ... six at a time!

DEALERS:
Some choice
dealer franchises
are still available.
Backed by our National
Adv. and Sales Promo-
tion Program.
Contact us now!

EMPIRE**attachments and devices****IRON WORKS INCORPORATED**

116 King Street Dept. F-85

Brooklyn 31, N. Y.

Gentlemen: Please send me FREE catalog, price list
and full information.

Name _____ Title _____

Address _____

City & State _____



EMPIRE attachments
made to handle
anything!



**Some of
Empire's attachments
are:**

Drum Clamp
All Purpose Clamps
Beer Keg Clamp
Side Shifters (Bar or Plate)
Special Purpose Clamps
Overhead Guards
Load Safety Racks
Booms
Paper Roll Clamps
Revolving Carriages
Single Rams
Forks
Fork Extensions
End Loaders
Carton Arms
Snow Plows
Scoops
Buckets
Brick Forks
Up Enders
Unloaders
Special Booms
Counter-Weights
Scissor Clamps

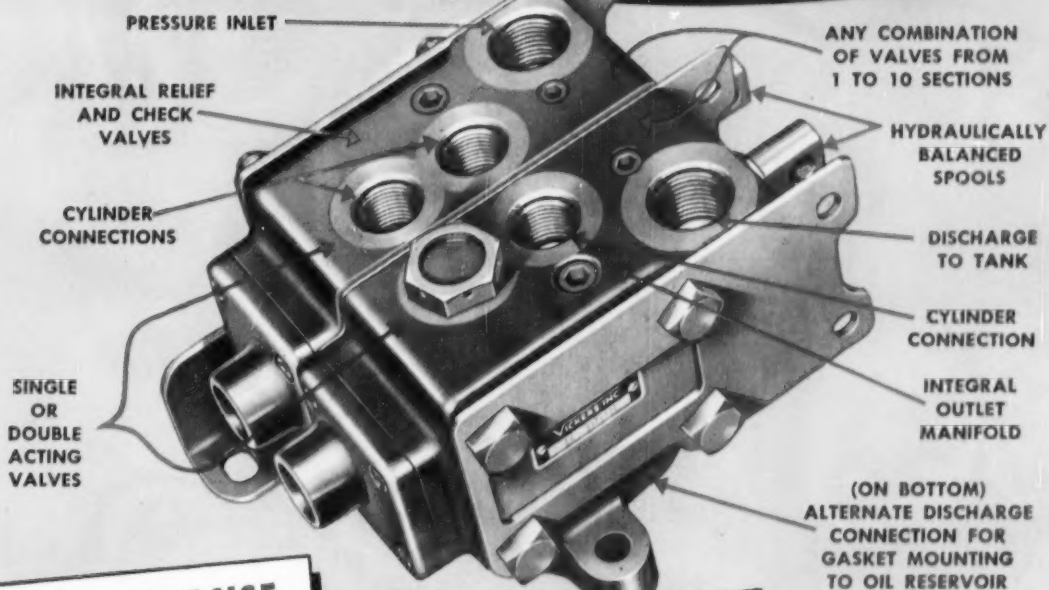
Visit us at
Booth 722—
September 20
to 22, 1955
at the 10th
Anniversary
Industrial
Packaging
and Materials
Handling
Show—
Kingsbridge
Armory, 29
West Kings-
bridge Road,
New York,
New York.

Circle No. 73 on Reader Service Card for more information

NEW!

Series CM11 **VICKERS**® MULTIPLE UNIT VALVES

For MATERIALS HANDLING EQUIPMENT,
FARM TRACTORS, BUCKET LOADERS,
CONSTRUCTION and MINING
MACHINERY, Etc.



**MORE PRECISE
CONTROL**

Improved Metering
Characteristics

REQUIRES LESS SPACE

New Combination Operating-
Valve and End-Plate Sections

LOWER COST

Simplified Design
and Construction

New, compact, more versatile design of valve. End sections combine in one casting the inlet or outlet manifold plate together with any operating-valve section. Inlet section also contains relief valve. Individual outlet plates available for single unit valves. Single- and double-operating valve sections can be added between end sections as needed. Valve can be adapted for tandem (series) operation. Single-acting valves available for either direction of lever shift.

Other features include protection of pump from reverse flow during shifting . . . three point mounting for more simple installation . . . cylinder connections with 3/4-16 N.F.-2 straight threads (AND 10050 type) which conform to SAE standards help insure leak-proof connections . . .

optional outlet ports in end section so valve can be gasket mounted to the oil reservoir or pipe connected. Designed for use with Vickers Series V-200 Vane Pumps (up to 11 gpm), the CM11 Valve can be used up to 2000 psi working pressure. For further information write for Installation Drawing M168643.

VICKERS Incorporated

DIVISION OF SPERRY RAND CORPORATION

1538 OAKMAN BLVD. • DETROIT 32, MICH.

Application Engineering Offices: • ATLANTA • CHICAGO AREA (Brookfield) • CINCINNATI • CLEVELAND • DETROIT HOUSTON • LOS ANGELES AREA (El Segundo) • NEW YORK AREA (Summit, N. J.) • PHILADELPHIA AREA (Media) PITTSBURGH AREA (Mt. Lebanon) • ROCHESTER • ROCKFORD SAN FRANCISCO AREA (Berkeley) • SEATTLE • ST. LOUIS TULSA • WASHINGTON • WORCESTER

6794

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

Circle No. 79 on Reader Service Card for more information

REDUCE "Down Time" and Costs with Job-Fitted Goodyear Industrial Tires



You get the right tire for the job when you choose Goodyears — America's most complete line of Industrial Tires.

And you can be sure of better mileage with lower down time and costs because these tires are job-fitted by size, tread design and rubber compound.

So start getting better tire savings in your plant—call your Goodyear Dealer today.

FREE Technical Engineering Advice and Service

To help you solve tough industrial tire problems, Goodyear maintains a staff of fully qualified technical experts. For their free recommendations, write Goodyear, Industrial Tire Division, Akron 16, Ohio.



ALL-SERVICE TREAD XTRA CUSHION



SMOOTH SOLID



ALL-WEATHER TREAD



RIB ALL-WEATHER PNEUMATIC (TUBELESS OR CONVENTIONAL)



SEMI-PNEUMATIC CUSHION

USE THE RIGHT TIRE FOR THE JOB—USE

GOODYEAR

INDUSTRIAL TIRES

All-Service, All-Weather, Xtra Cushion—T.M.'s
The Goodyear Tire & Rubber Company, Akron, Ohio